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THE POINT OF ELECTION AND MODES OF INVASION IN PULMONARY TUBERCULOSIS

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In this review of the modes of invasion in pulmonary tuberculosis, all minor avenues of entrance of the bacillus have been disregarded, and only inhalation and ingestive methods will be considered.

It is generally accepted by pathologists that the first stage of pulmonary tuberculosis is an involvement of the glandular and lymphatic structures of the lungs. Postmortem and roentgenographic evidence seems to prove that tuberculous foci are not established in lung tissue proper until after the peribronchial glands have been seriously damaged by the invading organisms. This is the so-called pretuberculous stage of the disease. In hundreds of reported necropsies, especially of children, foci in the peribronchial glands were the only demonstrable lesions in the body. This analogy has also been reported in comparative pathology, especially in cattle, which have been more carefully examined than other animals. In pseudotuberculosis of sheep and cattle, the pulmonary glands are first involved. Pulmonary pigmentation in man and animals shows first in the peribronchial glands. This view of the matter is strengthened further by the observation of human and veterinarian pathologists that if a focus is found in the lung tissue proper, this lesion is invariably accompanied by involvement of the pulmonary glands.

If the dosage is maintained, and other conditions are favorable, crippling of the peribronchial glands is followed by the arrest of a bacillus and the formation of a tubercle in lung tissue proper; and if this focus progresses to softening, it breaks through into the air vesicles, or into adjacent healthy tissue, where, in the latter case, bacilli that have been set free are again arrested by the highly complex system of lymph channels and glandular locks. In many cases, experts in roentgen diagnosis are now able to demonstrate involvement in the peribronchial glands, especially in children, long before the appearance of cough and sputum, thus furnishing the clinician ample grounds for the long entertained belief that cough and expectoration are secondary and late manifestations of pulmonary tuberculosis.

The problem, then, is to analyze the common anatomic methods, or routes, by which tubercle bacilli reach the point in lung tissue where they are arrested and colonized.

THE POSSIBILITY OF FOREIGN MATTER BEING INHALED DIRECTLY INTO THE AIR VESICLES

Minute particles of carbon, stone and such dust reach lung tissue, but the deposit of foreign matter in the interalveolar tissue or the lymphatic channels or the pulmonary glands does not prove that it was carried there in the ordinary process of respiration, as this function is commonly understood.

The general belief that anthracosis is due to the direct inhalation of dust is based largely on the fact that in miners and firemen, and certain stone cutters, the deposits of gritty matter can be demonstrated macroscopically as well as microscopically. This view of the question was seemingly upheld by Rindfleisch, who was able, in a series of necropsy studies of the lungs of charcoal workers, to demonstrate, and actually to classify, the carbonized wood deposits in the microscopic sections of the pulmonary tissues and in the peribronchial glands.

Nevertheless, if the histology of the respiratory mucous membrane is kept in mind, one cannot escape the conviction that the tidal air in its excursions up and down the trachea and bronchia would undoubtedly impinge foreign bodies somewhere on the long stretch of ciliated mucous membrane. One step further, by granting such a probability, establishes a profound doubt in one's mind whether dust or bacteria are ever actually driven directly into the air sacs in the ordinary act of breathing, or even by forcible inspiration.

And yet, pneumococci, influenza bacilli and other bacteria actually reach and grow in the air vesicles. The speculation that phagocytes might carry these organisms direct to the air sacs and plant them there has been offered as a solution of this perplexity, but it is a more reasonable explanation that these organisms, gaining a foothold on the bronchial mucous membrane, finally reach the air vesicles by an extension of the colony growth. Many writers believe that phagocytes pick up coal dust on the bronchial mucous membrane and carry it into the air sacs, and thence into the pulmonary lymph stream; but this seems improbable, if it is considered that even though the wandering cells do pick up dust and bacteria on the bronchial mucous membrane, these cells surely would be wafted along by the cilia, and finally driven out through the trachea, just as coal dust is driven out.

Many careful sections have been made of specimens from the lungs of miners accidentally killed while at work, and though the bronchia were markedly filled with coal dust, it was difficult for these investigators to demonstrate to their entire satisfaction any foreign matter in the air sacs themselves, notwithstanding the fact that the interlobular spaces and lymph channels were filled with carbon deposits

However, there is a histologic peculiarity of the deeper portion of the respiratory mucous membrane that must not be overlooked in this connection. The minute, terminal branches of the bronchioles are not supplied with cilia, and if bacteria or dust got past the cilia and reached this deeper portion of the bronchia. undoubtedly the suction or pull of the adjacent lymph streams would draw them backward into the air sacs, and thence into open lymph vessels, in which they would drift until arrested in some glandular storehouse along that chain.

Piersol says:

> Between the air vesicles, minute openings or stomata exist; they usually connect with microscopic passages leading into the lymphatic channels. By means of these channels, particles of inhaled foreign matter, often deeply pigmented, are carried from the air sacs into the lymphatics, and become lodged within the interlobular connective tissues.

Cornet presented to the medical world a mass of experimental evidence in proof of the inhalation method of infection of the lungs. Fluegge demonstrated that fine droplets of sputum were driven to considerable distances by consumptives in the act of coughing or sneezing. Hoffman infected guinea-pigs by means of a spray of tuberculous sputum. Buchner and Enderlein succeeded in infecting small animals without the spray, merely by exposing them in the room to droplets of sprayed sputum. The ordinary inhalation method was used by Nocard, Rossignol and Kossel to infect calves, by Reichenbach to infect goats, and by Tappeiner to infect dogs.

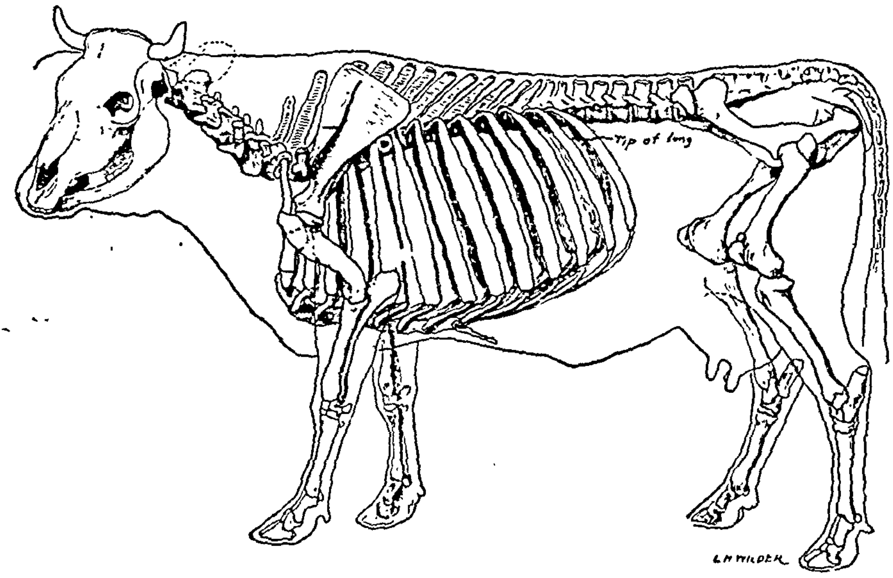

Fig. 1.—Skeleton of cow. Arrow points to location of tip of lung, which is the point of election in bovines. From Sissons.

Guerin and Grysez raised the issue that the possibility of swallowing had not been eliminated in these experiments, but the objection was immediately countered by Fluegge, Bartel and Neumann, using guinea-pigs, and by Titze and Weber, using calves, all of whom demonstrated that within a few minutes after exposure to infected dust, every portion of the lung showed the presence of tubercle bacilli, while the control exposure by feeding was much slower. Findel, working with guinea-pigs, used graduated dosage in the two methods, and found that it required only a fractional dose to infect by inhalation; while in the control animals it required a hundred times greater dosage to infect by ingestion. Titze and Weber, working with calves, demonstrated that the average dose required to infect the animal by inhalation was 0.01 mg., while it required 10 mg. of the same culture to infect by feeding.

Not satisfied with these experiments, which were still open to objection, Findel opened the trachea of dogs and calves and produced pulmonary infection by direct inhalation of tubercle bacilli. This particular experiment has been confirmed by a number of investigators. Similar inhalation experiments with the *Bacillus prodigiosus* were made by Hartman and Hartl, with mold fungi by Hilderbrand and Ballin, and with India ink by Kuss, for the purpose of demonstrating that these organisms and the ink could enter the lung tissue as foreign bodies by way of the respiratory mucous membrane.

Arnold and Penfick went a step further by attempting to produce experimental anthracosis by means of inhalation, but Grysez and others could not confirm Arnold's and Penfick's work, and they concluded that anthracosis was a condition that was induced by swallowing dust, the carbon reaching the lungs by way of the intestinal tract.

Finally, because of the constant involvement of the apex as the primary focus of infection in human tuberculosis, Grober's claim that the mode of infection was commonly through the tonsil, and thence to the parietal pleura opposite the dome of the apex, misled pathologists for a time, until attention was called to the fact that the lymphatics of the tonsil empty into the deep cervical chain, and they in turn, together with the chain from the parietal pleura opposite the apex, empty into the great veins, in the angle of the neck, making it highly improbable that such a backward infection is possible. Latham's assertion that there may be, and probably is, a backward invasion of the lymphatics by the tubercle bacillus, also has never been confirmed by necropsy studies, and lacks the pathologic analogy in syphilis or anthracosis, both of which progress in the course of the lymph stream.

THE POSSIBILITY OF FOREIGN MATTER REACHING THE LUNGS THROUGH THE INTESTINAL TRACT

Several reliable investigators have demonstrated by animal experimentation that the continuous introduction of lampblack into the intestinal tract, over a long period of time, will produce well marked anthracosis. Weigert had demonstrated previously that the younger the animal the more readily did foreign matter pass the barriers of the lymph nodes. In old cows, pigmentation of the lungs, and bronchial and mediastinal glands, exactly corresponds to the anatomic fields invaded by the tubercle bacillus. Guerin and Grysez, working with Calmette, failed in numerous experiments to produce anthracosis in animals exposed to a constantly saturated atmosphere of lampblack if the esophagus was closed; but anthracosis invariably followed if the lampblack was introduced into the stomach by means of a tube, or if mixed with the food.

The same investigators proved by repeated animal experimentation that tubercle bacilli, introduced into the stomach by means of the esophageal tube, penetrated the intestinal mucosa without demonstrable lesions, the organisms being recovered at varying periods in the lungs and mediastinal glands. Nicolas and Descas fed tubercle bacilli to fasting dogs, and recovered the organisms in the chyle duct as early as three hours after ingestion. Ravenel and Klebs immediately paralleled this experiment by introducing into the stomach of dogs, by means of the esophageal tube, tubercle bacilli suspended in a mixture of melted butter and warm water, the organisms being recovered from the chyle ducts and mesenteric glands in less than three hours in some of the experiments.

Behring has shown that even the anthrax bacillus will penetrate the intestinal mucosa in a few hours.

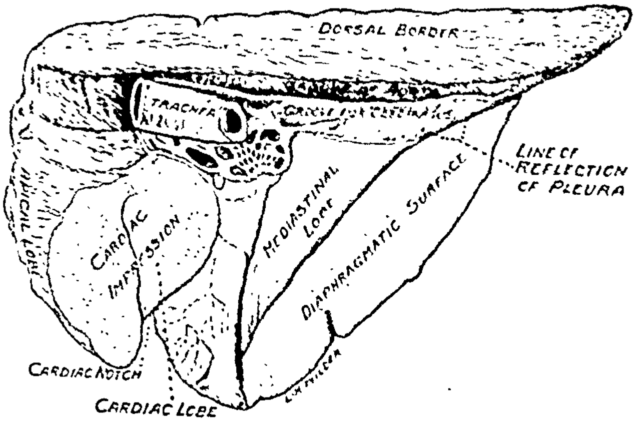

Fig. 2.—Lateral view of the bovine lung, the shaded portion of the tip showing the point of election. The bovine apical lobe also is frequently involved, but infection of the cardiac lobe, the most dependent portion of the bovine lung, rarely occurs, even in the last stages of the disease. From Sissons.

Schlossmann and Engel injected tubercle bacilli, suspended in cream, into the stomachs of guinea-pigs, and after six hours the animals were killed, and portions of lung tissue inoculated into other guinea-pigs, with positive results.

This experiment was also repeated by Ravenel, in a most careful manner, with positive findings. He opened the abdomens of guinea-pigs, and with a very thorough technic, introduced bacilli into the stomachs of the pigs by means of sterile needles, which were coated with paraffin, the intention being to avoid planting bacilli in the stomach wall while introducing the needle. The animals were killed at intervals of four and six hours, and portions of lung tissue injected into control guinea-pigs, with positive results. In another series, the animals were killed and examined at the end of six weeks. Nine out of ten had tuberculous foci in the lungs, besides more or less involvement of the thoracic and mesenteric glands.

Oberworth and Rabinowitch went a step farther in avoiding possible error in a similar series of experiments and succeeded in producing positive primary lung involvement, by feeding tubercle bacilli to young guinea-pigs through established gastric fistulas.

THE MODE OF INVASION IN HUMAN AND BOVINE TUBERCULOSIS

In analyzing the possible methods of infection of man with the tubercle bacillus, one is justified in basing fairly definite conclusions on experimental data that have been subjected to comparative pathologic analogies. Therefore, it is reasonable to assume that in whatever way the cow is infected it will be found that anatomically, the manner is not dissimilar in man; but at the very outset believers in the ingestion method, especially those who are wedded to the theory that milk is the prime factor in the spread of tuberculosis, are confronted with the confusing fact that the cow herself is not a milk feeder, notwithstanding her marked susceptibility to tuberculosis.

If one stops short here, and throws out of consideration the ingestion method of infection in bovines, then likewise one should exclude this method in the study of human tuberculosis; but the experimental data quoted above do not justify any such action.

As early as 1868, Chauveau produced pulmonary and general tuberculosis in young calves by feeding them ground material of diseased organs of tuberculous cows. Swine tuberculosis is undoubtedly by ingestion — nearly always by tuberculous milk. Experimentally, calves have been infected in this manner when the surroundings were otherwise controlled to prevent the possibility of contracting the disease by inhalation. Avian tuberculosis is by ingestion, without question.

The cow's infection is also by ingestion, notwithstanding the fact that she is not a milk feeder. A study of the habits of this animal is convincing that an infected cow spreads the contagion by explosive coughing, thus sending droplets of sputum in all directions, on her own food and on the food of her adjoining neighbors. Ravenel has proved that the cow does cough, and that she does throw off sputum in this manner.

Friedberger and Fröhner, long ago, called attention to the fact that when a tuberculous cow is placed in a stable, the disease progresses along a row, passing from one to another in regular order. Adams and Jobson made the interesting observation, on two different herds in which the cows were stalled in pairs, solid partitions as high as the animals' backs separating each pair from other pairs, that the tuberculous cow of the pair invariably infected her mate, but the cows in the adjoining stalls, if healthy, remained so.

Of course, this evidence in and of itself alone does not rule out the possibility of infection by inhalation; and yet, if viewed in the light of the methods by which swine and fowls contract the disease, it certainly deserves careful consideration.

There seems to be good ground for the stand taken by Aufrecht that tubercle bacilli gain the circulation, however introduced, and then traverse the blood vessels as foreign bodies until arrested, or until screened out in some organ, most commonly in the pulmonary terminal arteries. Here the bacillus passes the thin vessel wall barrier, to be picked up by lymphocytes, probably, and promptly carried to the nearest lymph node. That is the histologic picture of invasion in man and in animals. The pathologic picture does not come into view until a bacillus is arrested.

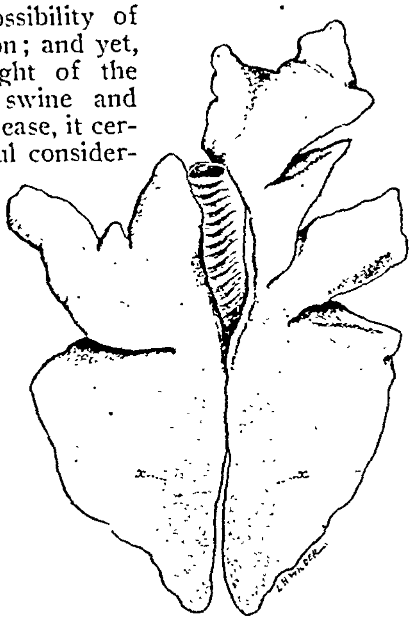

Fig. 3.—Superior surface of bovine lung, shaded portions marked x showing point of election. From Theobald Smith.

THE POINT OF ELECTION

Pathologists are now convinced that the tubercle bacillus, however introduced into the body, gains entrance to the circulation in man and in animals without demonstrable lesion. The final point of lodgment of the organism affords a wide field for theorizing, much of the vast literature on the subject of the initial site of pulmonary tuberculosis in man being wholly speculative, and often illogical, especially when subjected to the analogies of comparative pathology. It seems only fair to assume that whatever biologic or anatomic factor is advanced as the reason for primary involvement of the apexes in man, the same causes must apply in like manner to the initial site in the bovine.

The hypotheses that the two different bronchial angles subject one apex to greater exposure to infection on a particular side; the recent resurrection of Freund's theory to damage done to the apex by shortening of the first costal cartilage, followed by shortening of the first rib by ossification; the supposed unstableness of the apexes in mammalian life; vocational postural effects on the upper lobe; reversal of the respiratory rhythm; atelectatic zones, and many other similar assertions, fall to the ground in attempting to account for the point of election in bovine tuberculosis. If any of these fanciful theories appeal to the imagination, then it seems fair to insist that whatever causative factor is used to explain apical involvement in man, the same logic, under like conditions, should be applied to elucidate the point of election in the lungs of cattle.

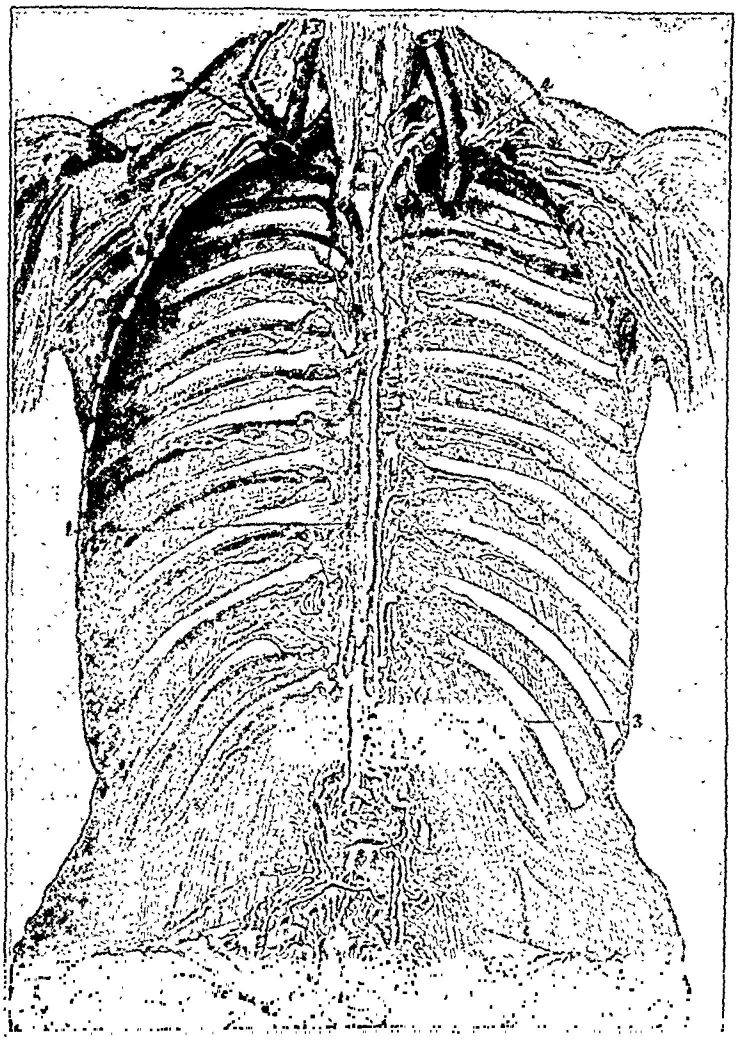

Fig. 4.—Thoracic duct, and the deep cervical lymphatics that anastomose with the parietal pleura opposite the apexes of the human lungs. By Mascagni. From Cuneo.

Pigmentation of the lungs in man, and in cattle, corresponds precisely to the fields of invasion of the tubercle bacillus. In man the apexes are the initial sites of demonstrable tuberculous foci. This is also true in anthracosis. In the cow, however, the initial lesion is at the very tip of the caudal lobe, the most superior portion of the bovine lung, anatomically corresponding to the most dependent portion of the human lung (Figs. 1, 2 and 3). This portion of the cow's lung is the most expansible, and has the best lymphatic drainage. None of the quoted hypotheses offers a reasonable explanation why this portion of the cow's lung is the point of election. The reason must be purely anatomic, for if bacilli first gain the blood stream through the lymph channels, then the pulmonary circulation must of necessity distribute them uniformly to all portions of the lungs, in cattle, as well as in man.

To emphasize a point, it is restated that in cattle, as well as in man, the deposits of foreign matter are anatomically the same as for tubercle bacilli. The lungs of old cows show the greatest pigmentation in the superior portion of the tip of the caudal lobes, which is shown in Figure 3. The shaded portions in the caudal lobes, maked *x*, are the points of election in bovine tuberculosis.

It has been repeatedly demonstrated that the very tip of the caudal lobe of the cow's lung is more generously supplied with lymphatics than any other portion of the lung. These vessels converge at the root of the lungs and empty into the peribronchial glands. Lying contiguous to, and just above the tip of the caudal lobe, is the large posterior mediastinal gland, which picks up the lymphatic plexus on the thoracic surface of the diaphragm, and those from the pericardium and lower portion of the esophagus. The esophagus, thoracic aorta, inferior vena cava and thoracic duct lie immediately above this gland. Exactly beneath the gland, as shown in Figure 2, and separating it from the lung tissue, are the parietal and visceral layers of the pleura, which enclose the pleural lake.

How this gland is infected, and why it shows such constant pigmentation, is the first and foremost problem to solve. In one series of fifty-three careful necropsies of tuberculous cows, Theobald Smith demonstrated that this gland was always involved when there was a focus in the caudal lobe, and in several instances the gland showed old, calcareous lesions, while the tip of the nearby caudal lobe, lying across the pleural lake, was probably invaded at a more recent date. Out of a series of over 40,000 necropsy studies of bovine tuberculosis in the Budapest abattoir, it was demonstrated that the infection in over one third of the cases was confined to the peribronchial and posterior mediastinal glands, a large percentage—figures not stated—of this number showing that the posterior mediastinal gland alone was involved. In one particularly interesting case, Mohler, of the United States Bureau of Animal Industry, demonstrated tuberculous foci in this gland in a five months' bovine fetus, with no other lesions in the carcass. In pseudotuberculosis, or caseous lymphadenitis of sheep, which certainly is not an inhalation disease, the same topographic involvement of the sheep's lung and posterior mediastinal glands takes place, just as with foreign matter and tubercle bacilli.

If one keeps the anatomy of this region of the thorax clearly in mind, especially the relations of the two pleural surfaces, it seems a reasonable belief that bacilli and pigmented foreign matter must cross the pleural lake, either from the lung side, upward to the gland, or from the gland, downward to the lung. The problem is confusing from either view, especially if the attempt is made to prove that the gland is first invaded, and the lung secondarily infected.

The reasonable conclusion is that bacilli and foreign matter are arrested in that portion of the lung shown in the shaded portion in Figure 3. At that point of the lung there must be an area of lymph stasis induced by the suction of the large posterior mediastinal gland, which, by means of a network of lymph vessels, drains that portion of the parietal pleura lying exactly opposite.

It seems fair to presume that the gland either receives its infection from the immediate underlying lung tissue, or that this portion of lung tissue receives its infection from the posterior mediastinal gland lying just above. In either event the pathologist is confronted with the fact that if bacilli are first screened out of the circulation at this point, or first penetrate the air vesicles, bacilli, and foreign matter as well, must pass through two layers of pleura to reach the gland; or if they are first screened out in the gland they must pass to the underlying lung tissue by the same route.

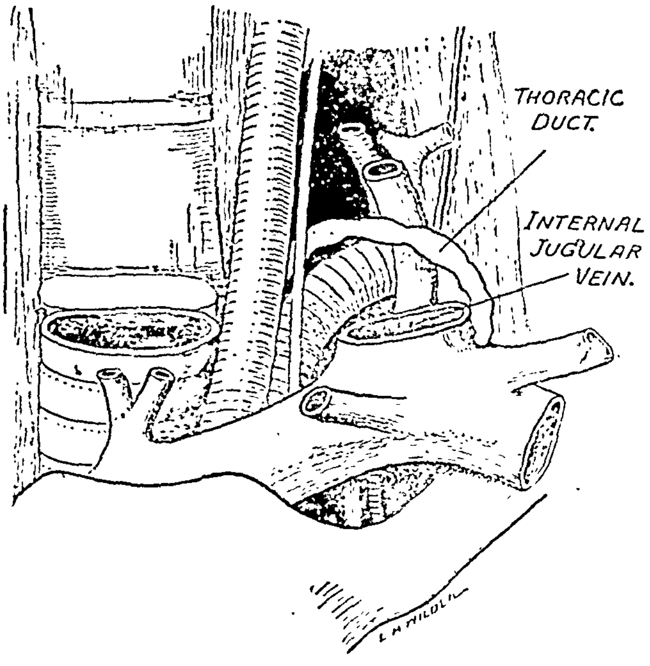

Fig. 5.—Terminal bend of the thoracic duct. From Cuneo.

That there are counter currents in the two pleural layers at this portion of the cow's lung is undeniable, and these counter currents, if they possessed any appreciable force, would most assuredly create a lymph stasis at a delimiting area somewhere between the points of suction. The mechanics of this assumed lymph stasis is not hard to understand if the anatomy of the great thoracic duct is held clearly in view (Fig. 4). This duct, as large as a good sized vein, is generously supplied with check valves throughout its course, to prevent a backward flow of chyle and lymph. Opposite the fifth dorsal vertebra, in the bovine, it receives a large lymphatic vessel from the enormous posterior mediastinal gland. The circulation in the thoracic duct is maintained almost wholly by means of the suction caused by the venous flow past the orifice of the duct at its opening into the subclavian vein (Fig. 5). The pull in the trunk of the duct would certainly influence the flow of lymph from the posterior mediastinal gland, and this in turn would drain the pleural lake in that area, and the visceral layer of the pleura, beyond. Then if the peribronchial glands have been previously damaged by invading organisms or by deposits of coal dust, accidental microscopic foreign matter falling within this exact zone of lymph stasis would most likely be temporarily arrested, with the subsequent formation of a focus of infection in the case of the tubercle bacillus.

If bacilli first reach the circulation, as most pathologists now believe, then there is no good reason to doubt that all portions of the human and bovine lung are exposed to an equal degree of infection or dosage, whether they enter the circulation by way of the alimentary tract, or are inhaled directly to the air sacs and then penetrate to the underlying interalveolar tissue. Tubercle bacilli have no selective power for any particular portion of lung tissue. Once they are arrested and gain a foothold, they will grow as rapidly in one portion of the lung as in another.

The lodgment, then, of bacilli and foreign matter by apparent selection in a special organ, and in the superior part of this organ, as is the case in both the cow and man, contrary to the clinical observation that pneumonia always attacks the lower lobe, and contrary to the laws governing ponderable matter, must be due to mechanical causes influencing them along unusual lines. In man, that portion of the parietal pleura lying contiguous to the apex of the lung is drained by a vast network of lymph vessels that empty into the deep cervical chain (Fig. 4). Nowhere else in the human thorax is there a decided counter lymph current; and granting that there is this counter current, it could account for an area of lymph stasis in the apex of the lung.

Study of the pulmonary lymphatic distribution in man shows that the apex, apparently, is not well protected by its separate set of small peribronchial glands. Reasoning from this fact alone, one is liable to jump to the conclusion that this seeming lack of glandular defense might account for the greater frequency of apical infection. Comparative pathology saves one from this error, however, as the point of election in the cow's lung has the greatest defensive lymphatic barrier. Carrying the analogy still further, it is the most plentifully supplied with lymphatics, and if posture has any bearing on the question, the caudal lobe, by its superior position in the thorax, has the best bronchial drainage. In fact, in taking any view of the method, or methods of infection in man, every anatomic or biologic argument that has been cited must apply with equal force in explaining the method of bovine infection.

CONCLUSIONS

Pulmonary tuberculosis, in man as well as in animals, is primarily an infection of the lymphatic vessels and lymph glands in the lungs.

Cough and expectoration are late manifestations of the disease.

With the experimental evidence at hand, it is a fair assumption that, commonly, infection in man and animals is by the ingestion method.

Even where the bacillus is planted on the respiratory mucous membranes by means of dried sputum, or by dried feces, as is often the case with cattle, the anatomic method is still by the intestinal tract, for the reason that the number of bacilli that would be swallowed under such conditions is out of all proportion to the very doubtful number that might possibly reach the air vesicles by inhalation.

The granting that infections are commonly by the intestinal tract does not lessen at all the potential danger of infected dust, as much of this dust would be swallowed, even though planted on respiratory mucous membranes by inhalation.

All portions of the lungs, in man and in animals, are invaded with dust and tubercle bacilli in equal measure, whether the route be through the trachea or through the intestinal tract.

The lower, as well as the upper, peribronchial glands are equally pigmented in anthracosis, and roentgenograms show the same involvement in early tuberculosis. Pigmentation and infection of the lower lobes in man do not appear until the defenses of the peribronchial glands are permanently damaged.

No portion of the lung possesses a specific biochemical constituent that would sensitize it to the tubercle bacillus, nor does the bacillus possess selective properties for any special portion of the lung.

Whatever exact reason exists for the constant invasion of a specific area in the lungs of man and cattle, the causes for this point of election must be wholly physio-anatomic.

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SODIUM AND POTASSIUM IODIDS IN ROENTGENOGRAPHY

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A few weeks ago, in a preliminary report,[1] attention was called to some experimental results in the use of potassium and sodium iodids as opaque mediums in roentgenography. Since this report was made, these solutions have been put to practical use in a sufficient number of cases to warrant a report of their clinical application.

PREPARATION OF SOLUTIONS

For pyelography, a 25 per cent. aqueous solution of sodium or potassium iodid is used. Thus, 100 gm. of solution is made by dissolving 25 gm. of the salt in 75 c.c. of water. For cystograms, a 15 per cent. solution gives sufficient density. As was noted in the previous article, these solutions are stable, neutral in reaction, and cause no precipitation in urine or bloody urine. On standing, they become slightly yellow, but this causes no trouble. There are no special precautions to be observed in preparing the solutions, and they are easily sterilized by boiling.

CLINICAL RESULTS

These solutions have been used by us or in our presence in eight human cases, which have included the examination of two bladders, three kidneys and three chronic sinuses. In all cases the roentgenograms have been entirely satisfactory. The pyelograms were made with solutions varying from 25 to 33 per cent. in strength, the potassium and sodium salts being used interchangeably. A 25 per cent. solution of the sodium salt casts a shadow sufficiently dense for all purposes, though a denser solution may be safely used if greater contrast is desired. For cystograms, a 15 to 20 per cent. solution of either salt is used.

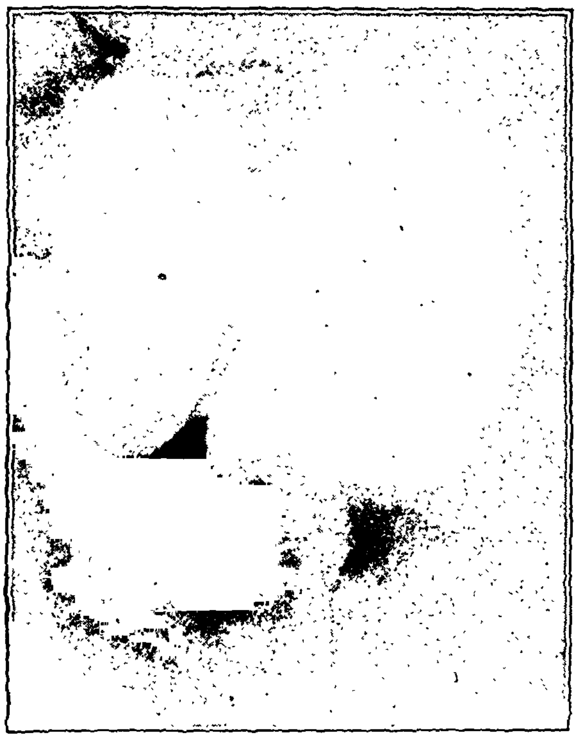

Fig. 1.—Cystogram of bladder filled with 15 per cent. solution of sodium iodid; patient of Dr. Bransford Lewis. In addition to the large diverticulum, the prostatic cavity is shown. The prostate gland had been removed elsewhere some time before. (Courtesy of Drs. Bransford Lewis and Neil S. Moore.)

As regards pain or discomfort to the patients, in making the two cystograms, there was no complaint of any kind in either case. In making the pyelograms, there was complaint of some pain over the bladder and along the course of the ureters, but no more than is often seen following ureteral catheterization alone. Since the solutions when introduced into the bladder caused no unusual sensation of any nature, it is probable that the discomfort in filling the kidney pelvis was due to mechanical causes and not to the character of the solutions. The patients walked to their homes after the pyelograms were made, and complained of no further trouble. One voided a small quantity of blood-tinged urine after the ureteral catheters were withdrawn; after this, and in the other cases, the urine voided was unchanged in character. The large bladder diverticulum, shown in Figure 1, was removed by Dr. Lewis four days after the cystogram was made. At operation the bladder showed no sign of any irritation due to the solution used.

In view of this experience, though rather limited in quantity, we feel reasonably safe in recommending these solutions for this kind of work.

After one of us had been ordered to duty in St. Louis, we were fortunate in having Drs. Bransford Lewis, J. R. Caulk and H. G. Greditzer volunteer to use the solution. We acknowledge their kindness in allowing us to use the accompanying illustrations.

CHOICE OF SOLUTIONS FOR PYELOGRAPHY

Colloidal silver solutions are quite satisfactory for this work. These solutions, however, are relatively expensive, and in addition possess undesirable physical properties. In the past three years the thorium solution introduced by Burns[2] has become very popular. Its cost is much less than that of colloidal silver of equal density, it is a clear solution, it does not stain, and it has a relatively low viscosity. A little more than ordinary care is necessary to prepare the solution, it being necessary to neutralize the aqueous solution of thorium nitrate, which is acid in reaction, and to add sufficient amount of sodium citrate to keep the thorium from precipitating. Though this is not at all a difficult procedure, most users have preferred to buy the prepared solution which, as sold at present, affords the makers a considerable profit. At present thorium salts are rather difficult to obtain and are not listed by several large wholesale chemical firms which formerly kept them. At the present retail price of sodium and potassium iodids, a 25 per cent. solution of these salts is about half as expensive as the prepared 15 per cent. thorium solution. The sodium salt is a little more expensive than the potassium, and in the same concentration gives a slightly denser shadow for the reason that its relative iodin content is higher. These iodid solutions have all the desirable features of the thorium preparation, and in addition are made with much less trouble, are less expensive, and the ingredients are obtainable at any drug store. In the event of absorption in ordinary amounts, these salts are known to be nontoxic.

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[1] Cameron, D. F.: Aqueous Solutions of Potassium and Sodium Iodids as Opaque Mediums in Roentgenography: Preliminary Report, The Journal A. M. A., March 16, 1918, p. 754.

The prevailing retail price of a pint of the silver, thorium and iodid solutions of the same density is about $10, $5 and $2.50, respectively. The wholesale price is approximately 25 per cent. less.

THEORETICAL CONSIDERATIONS

It is obvious that a sufficiently concentrated solution of any iodid or element of high atomic weight will be opaque to the roentgen ray. For use in pyelography, however, these solutions must be nonirritating and nontoxic, and must not form precipitates with urine or bloody urine. These restrictions limit the field considerably. From a more or less systematic survey of the common chemical substances that might be used, the iodid solutions recommended seem to be most suitable. On general principles it would seem better to have solutions of lower osmotic pressure. Aside from using colloidal solutions, this result could be obtained by using salts whose molecules in solution contain several atoms of high atomic weight which are not ionized to a high degree. Thorium iodid came to mind as a possibility. This could not be obtained on the market, and in any event its scarcity and expense would rule it out. Strontium iodid has several properties to recommend it. It is easily obtained, is nontoxic, and is not very expensive. It forms a neutral solution in water, and a 20 per cent. solution casts a good shadow under the roentgen ray. The one objection to its use is that when mixed with urine a very light, flocculent but appreciable precipitate occurs, requiring some time, however, to form and settle. Though this is not so serious, it should be a bar to its use in cavities which cannot be well irrigated. Other iodid and heavy metal solutions were tried, but none were found which are so free from objections as the two recommended.

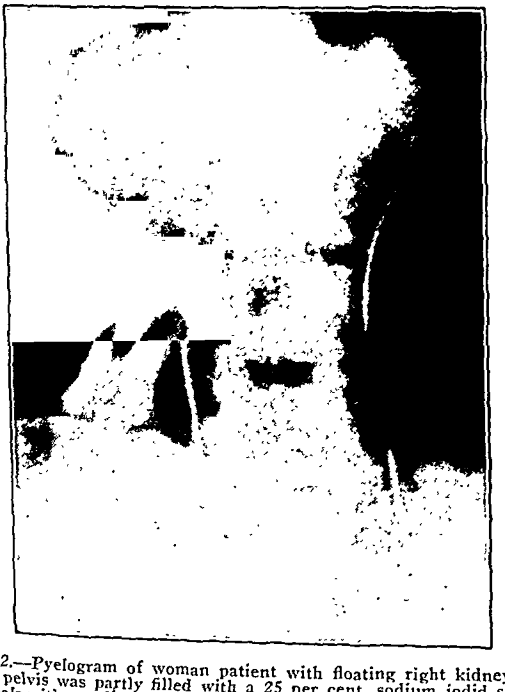

Fig. 2.—Pyelogram of woman patient with floating right kidney. The kidney pelvis was partly filled with a 25 per cent. sodium iodid solution. The malposition of the kidney prevented a better technical result. (Courtesy of Dr. H. G. Greditzer.)

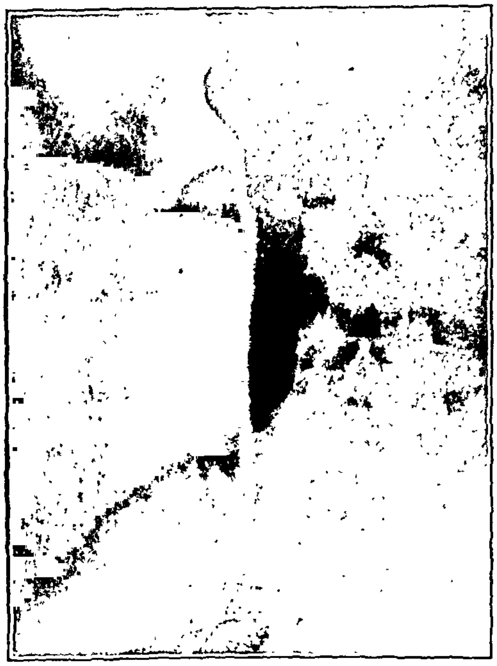

Fig. 3.—Pyelogram of right kidney of a man. A 33 per cent. potassium iodid solution was used. (Courtesy of Dr. H. G. Greditzer.)

SUMMARY

1. Excellent pyelograms have been obtained through the use of from 25 to 33 per cent. aqueous solutions of sodium or potassium iodids as opaque mediums. A 25 per cent. solution of the sodium salt is recommended for this work, though if greater contrast is desired, a stronger solution may be used. A 15 to 20 per cent. solution is sufficient for good cystograms.

2. These solutions have been used, either by us or in our presence, on eight patients. No undesirable effects of any nature have been noted.

3. The solutions are made by dissolving the proper amount of the salt in water. The solution thus formed is neutral in reaction, quite saline in taste, but nontoxic and nonirritating to the bladder or kidney pelvis, and causes no precipitation when mixed with urine or blood-tinged urine. Of all solutions used in pyelography, we are familiar with none so easily made and so inexpensive.

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[2] Burns, J. E.: Thorium. A New Agent in Pyelography, Bull. Johns Hopkins Hosp., 1916, 27, 157.

A CASE OF DOUBLE SPONTANEOUS PNEUMOTHORAX *

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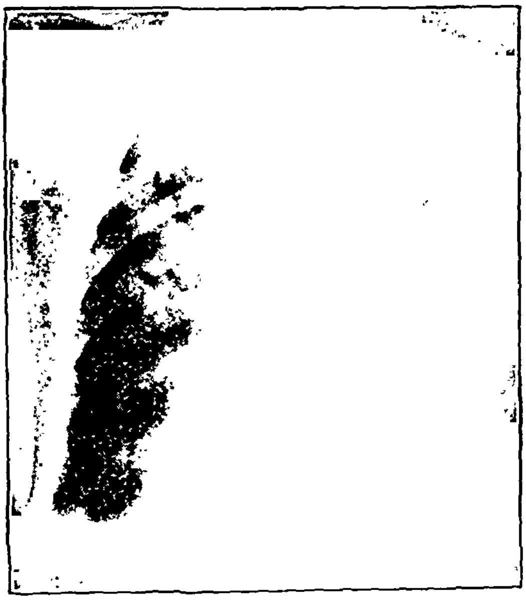
Spontaneous or natural pneumothorax is not an infrequent complication in pulmonary tuberculosis. Double spontaneous pneumothorax, however, is exceedingly rare. In a review of the indexed literature I was unable to find a single case report on record.

REPORT OF CASE

I. S., a man, aged 50 (Case 2714), a merchant, admitted, Jan. 2, 1917, presented a negative family history, aside from the fact that the father died of probable pulmonary tuberculosis. The patient had measles during childhood, but had made a good recovery with no complications. No other illness was noted until the onset of pulmonary tuberculosis about 1905. The type of onset was insidious, with anorexia, loss of weight, cough, expectoration, and night sweats. The patient later developed pain in the right axilla, and occasional streaked sputum. The sputum was found positive at that time. Since the onset in 1905, the patient had been subject to frequent colds and to attacks of sore throat. He wandered over a considerable portion of the United States in search of health, and eventually came to Denver, Jan. 2, 1917, to be admitted to the Sanatorium of the Jewish Consumptives' Relief Society.



Right side: Complete collapse with fluid to fourth rib. Pneumothorax of longer standing. Left side: Acute type of pneumothorax, partial in extent.

On admission the symptoms were severe cough (worse at night and on lying down), expectoration, occasional chills, temperature rising to 100 F. in the afternoon, with a pulse range of from 80 to 104. There were no night sweats, weakness was marked, and there were occasional blood streaks in the sputum, which was positive for tubercle bacilli. Dyspnea was marked on the least exertion. There was rather severe pain over the right side, which had been present, off and on, during the past twelve years. The appetite was good and the bowels were regular.

The patient was markedly emaciated, and looked more than 60 years of age. He was somewhat cyanotic, with marked depressions above and below the clavicle, in both suprascapular and infrascapular spaces, and in the intercostal spaces. The secondary muscles of respiration were markedly developed, the costal angle was acute, the glands were not palpable, the skin was dry and somewhat scaly, the hair was sparse and dry, the eyes, nose, throat and ears were normal, there were no pulsations in the neck, and the thyroid gland was not enlarged.

The heart was to the right, the right border being at the right nipple line. The left border was under the sternum. The sounds were normal, the radial arteries were palpable, the superficial veins on the extremities were dilated, and the venous flow was sluggish. The systolic blood pressure was 94, and the diastolic, 64. The abdomen was negative. The liver, spleen and kidneys were not palpable. The urine was normal. There was a marked tenderness over both posttibials, the reflexes and the bones and joints were normal, and the muscles were atrophied throughout. The chest examination revealed infiltration to cavity formation throughout both lungs. There was a tendency to hyperresonance over both lungs which we thought was due to associated emphysema. No signs of fluid and no splash were present.

The patient left the institution, Feb. 12, 1917, after a disagreement with a fellow patient, and went to live at a farmhouse a few blocks distant from the sanatorium. A few days later we heard that he was very ill and had a great deal of pain on the right side. He was up and about in a few days. March 4, Dr. Joseph W. Craighead saw him and, although the patient was so sick and in such severe pain that an examination could not be properly made, he made a diagnosis of spontaneous pneumothorax, from the symptoms observed. A few hours later when admitted to the sanatorium the patient was moribund, and twenty minutes later he died.

To verify our diagnosis, a necropsy being unobtainable, we examined the body by fluoroscopy and discovered a right-sided pneumothorax with fluid. This being of sufficient interest, we made a roentgenogram of it. On developing the plate we were much surprised to find what looked like an acute pneumothorax on the left side.

We concluded that the patient developed the pneumothorax on the right side soon after leaving the sanatorium, and that the pneumothorax on the left side developed, March 4, and diminished his breathing space sufficiently to produce death.

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* From the Sanatorium of the Jewish Consumptives' Relief Society.

ARTIFICIAL PNEUMOTHORAX IN THE TREATMENT OF PULMONARY TUBERCULOSIS

RESULTS IN PRIVATE AND DISPENSARY PRACTICE

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The basis of this report is a record of thirty-two cases of pulmonary tuberculosis treated by an artificial pneumothorax of nitrogen gas during a period of three and one-half years. It has been claimed that a sanatorium regimen is an essential element in the management of patients treated by pulmonary compression. Our results in this series will, I hope, disprove the necessity, although I fully admit the advantages of sanatorium treatment, and cause us to realize that a great deal can be done for the many patients at home, unable or unwilling to seek the western sanatoriums for relief.

These cases were taken chiefly from the material afforded by the Houston Anti-Tuberculosis League Clinic, and the patients were in many instances unable to procure the rest and nourishment prescribed for them. Nineteen men and thirteen women were treated for an average period of six months each; three patients were treated for eighteen months each; four for one month each, and the other patients for varying periods between. The patients were classified as seven, or 22 per cent., in the first stage; fourteen, or

44 per cent., in the second stage, and eleven, or 34 per cent., in the third stage. Their ages varied from 15 to 60 years. Our first seven cases were selected chiefly because they were seemingly hopeless. But later we began to discriminate more closely as we came to realize that in this procedure we had an exceedingly effective measure for assisting these unfortunates in arresting their disease.

A Floyd-Robinson apparatus was used, and the operation was performed under procain (novocain) and epinephrin anesthesia. The physical examination was, in most cases, supplemented by a careful roentgen-ray examination. An effort was made to secure unilaterally involved cases, or patients with slight involvement of the untreated lung. The degree of activity of the untreated lung is of more consequence than the amount of lung tissue involved per se. This is because a relatively larger area of nearly quiescent tuberculous lung tissue will bear the strain of having to act vicariously for the collapsed lung better than a smaller area of actively diseased tissue. As will be seen in the case reports, this ideal was not possible because we had to accept the material available for treatment. Twelve of the patients had involvement of the untreated lung, which was of a more or less inactive type. An area without cavities and râles in the untreated side, even involving the greater portion of a lobe, will offer a better prognosis than a small, active focus in that lobe. It is unwise to treat any case, except palliatively, which presents a tuberculous focus in the untreated basal lobe. The opposite lung, acting vicariously for its compressed mate, and therefore subjected to greater expansible effort, will more readily activate a focus in the base where the expansile mobility is greatest. All the eleven rather extensively involved bilateral cases presented signs of cavity in the treated lung; while in the opposite, that is, the better lung, none of the cases had any sign of cavation.

SUMMARY OF THIRTY-TWO CASES

Case	Occupation	Sex*	Age	Race†	Duration of Disease	Duration of Treatment	Involvement		Stage			Result During Treatment			Present Condition					State
							Unilateral	Bilateral	First	Second	Third	Adhesions	Improved	Unimproved	Improved	Unimproved	Arrested	Dead	Unknown	
1. W. E. N.	Carpenter	♂	47	H. S. White	1 yr.	6 mo.	..	+	..	..	+	..	+	..	..	..	..	+	..	Married
2. J. A. D.	Telegrapher	♂	31	H. S. White	1 yr.	1½ mo.	..	+	..	..	+	..	+	..	..	..	..	+	..	Married
3. J. R. K.	Dentist	♂	20	H. S. White	1½ yr.	6 mo.	..	+	..	..	+	..	+	..	..	..	+	..	..	Single
4. E. J.	Farmer	♂	36	H. S. White	6 mo.	1 mo.	..	+	..	..	+	..	+	..	..	..	..	+	..	Married
5. H. W.	Tailor	♂	22	H. S. Colored	1 yr.	1 mo.	..	+	..	+	..	..	+	..	..	..	+	..	..	Married
6. H.	Farmer	♂	46	H. S. White	3 yr.	0	..	+	..	+	..	+	..	..	..	..	..	..	+	Single
7. F. S.	Housewife	♀	48	H. S. White	3 yr.	6 mo.	..	+	..	..	+	..	+	..	..	+	..	..	..	Married
8. G. F. W.	Farmer	♂	61	H. S. White	5 yr.	6 mo.	..	+	..	+	..	..	+	..	..	..	+	..	..	Married
9. G. P.	School girl	♀	15	H. S. White	6 mo.	18 mo.	..	+	..	+	..	..	+	..	..	..	+	..	..	Single
10. L. L.	Farmer	♂	24	Italian	6 mo.	2 mo.	..	+	..	..	+	..	+	..	..	..	..	+	..	Single
11. P. L.	Farmer	♂	24	Italian	2 mo.	2 mo.	..	+	..	+	..	..	+	..	..	..	..	+	..	Single
12. M. B.	Housewife	♀	35	White H. S.	1 yr.	0	..	+	..	..	+	+	..	..	..	..	..	+	..	Married
13. R. F.	Solicitor	♂	36	White H. S.	1 mo.	3 da.	+	..	+	..	..	..	+	..	..	..	+	..	..	Married
14. T. S. H.	Clerk	♂	50	White H. S.	1 yr.	18 mo.	..	+	..	..	+	..	+	..	..	..	+	..	..	Married
15. J. B.	Elevat'r boy	♂	19	White H. S.	1 yr.	0	..	+	..	..	+	+	..	..	..	+	..	..	..	Single
16. C. W. B.	Clerk	♂	31	White H. S.	7 mo.	18 mo.	..	+	..	..	+	..	+	..	+	..	..	..	..	Married
17. R. E. L.	Clerk	♂	31	White H. S.	8 mo.	0	..	+	..	+	..	+	..	..	..	..	..	+	..	Married
18. W.	Housewife	♀	28	White H. S.	6 mo.	0	+	..	..	+	..	+	..	..	..	..	..	+	..	Married
19. A.	Shoemaker	♂	43	Jewish	3 yr.	2 wk.	+	..	..	+	..	..	+	..	..	..	..	+	..	Single
20. C. W. S.	Foreman	♂	50	White H. S.	10 yr.	7 mo.	..	+	..	..	+	..	+	..	..	+	..	..	..	Married
21. L. A. H.	Housewife	♀	28	White H. S.	2 mo.	1 yr.	+	..	+	..	..	..	+	..	..	..	+	..	..	Married
22. A. F. B.	Housewife	♀	33	White H. S.	3 yr.	1 yr.	+	..	..	+	..	..	+	..	..	..	+	..	..	Married
23. R. H.	Brickmason	♂	20	White H. S.	5 mo.	14 mo.	..	+	..	+	..	..	+	..	..	..	+	..	..	Single
24. F. W. G.	Housewife	♀	40	White H. S.	5 yr.	6 mo.	..	+	..	+	..	..	+	..	..	..	+	..	..	Married
25. J. J. T.	Housewife	♀	30	White H. S.	3 mo.	6 mo.	+	..	..	+	..	..	+	..	..	..	+	..	..	Married
26. B. L.	Clerk	♂	46	White H. S.	1 yr.	2 mo.	..	+	..	+	..	..	+	..	+	..	..	..	..	Single
27. M. A.	Housewife	♀	32	White H. S.	5 yr.	8 mo.	..	+	..	+	..	..	+	..	..	..	+	..	..	Married
28. E. M. H.	Housewife	♀	26	White H. S.	1 yr.	8 mo.	+	..	+	..	..	..	+	..	..	..	+	..	..	Married
29. F. S.	School girl	♀	17	White H. S.	10 mo.	4 mo.	..	+	..	..	+	..	+	..	+	..	..	..	..	Single
30. C. F. S.	Housewife	♀	33	White H. S.	2 mo.	9 mo.	+	..	+	..	..	..	+	..	..	..	+	..	..	Married
31. M. H.	Sailor	♂	27	White H. S.	2 mo.	8 mo.	+	..	+	..	..	..	+	..	..	..	+	..	..	Single
32. V.	Housewife	♀	32	White H. S.	1 yr.	6 mo.	+	..	+	..	..	..	+	..	+	..	..	..	..	Married

* In this column, ♂ denotes male, and ♀ female.
† In this column, H. S. means American nativity.

The technic is comparatively simple, and the operation safe, if the indications are rigidly followed. It is self evident that, for the successful performance of the operation, pleural adhesions should be at least limited in extent, and preferably nonexistent. In 15⅔ per cent. of our cases, we encountered troublesome adhesions which prevented us from carrying out the treatment. The use of the fluoroscope is of the greatest value in this particular, although it is possible in a majority of the cases to determine the presence of adhesions by the usual methods of physical examination. With a well marked Litten's sign and fair basal excursion, and the absence of marked chest retraction, it is reasonable to assume that troublesome adhesions are absent. The choice of the site of puncture is usually at the fourth or fifth interspace in the anterior axillary line, or at the angle of the scapula. It is well to percuss lightly the area to be elected, and unless a fair quality of resonance is present, adhesions are liable to lie beneath, and another site should be chosen.

I shall not attempt to describe every case in detail, but shall give a summary of the histories of six cases, classifying them as follows:

1. Hopeless, bilaterally involved, advanced tuberculosis (Case 1).
2. Chronic, bilaterally involved, fibroid tuberculosis (Case 2).
3. Acute pneumonic tuberculosis (Case 3).
4. Pulmonary hemorrhage (Case 4).
5. First-stage tuberculosis (Case 5).
6. Chronic tuberculosis, with a large cavity in the compressed lung, and moderate involvement in the better lung (Case 6).

REPORT OF CASES

Case 1.—W. E. N., aged 47, an American carpenter, married, had suffered from the disease one year before the first examination. The disease was extensively bilateral, most marked in the right lung with signs of cavity in the right upper lobe. As a third-stage case, it was hopeless. The patient was bedridden, expectoration was profuse, and there were night sweats, dyspnea and high temperature. Artificial pneumothorax on the right side was begun, June 3, 1914. The temperature dropped to 99 F. in the afternoon, and for four months was never above 99.2. The patient improved wonderfully. The sputum decreased, the night sweats stopped, the appetite improved, and the patient gained in weight and strength until he could get out of bed at will. In November, a right-sided pleural effusion appeared which partially compressed the lung until the patient's death in March, 1915.

Case 2.—F. S., a widow, aged 48, an American, referred by Dr. C. C. Green, gave a history of loss of weight, slight expectoration, night sweats, and afternoon fever—symptoms that had been present for the previous three years. The woman was frail, with extensive involvement of the right upper lobe, and of the right middle lobe to a lesser degree. The lower lobe was slightly involved, with considerable fibrosis throughout the right lung. The apex of the left lung was also slightly involved; the lower lobe was practically normal. Artificial pneumothorax was begun, Feb. 6, 1915, in the right pleural cavity. Some difficulty was experienced because of pleural adhesions, and only a partial collapse was secured. Injections were continued at intervals until July. Meanwhile, between that time and the previous date of April 25, she had been absolutely free of fever. In July the injections were discontinued, and for a number of months the patient improved and continued to do well. Her surroundings were poor and she took practically no care of herself from that time on. May, 1917, she reported that she was not doing well at all and she looked very thin, coughed a great deal and expectorated considerably.

Case 3.—G. P., a schoolgirl, aged 15, American, had suffered from the disease for six months. She complained of high afternoon temperature ranging from 102 to 103 F., of drenching night sweats, of loss of weight, etc. The right upper lobe and the upper part of the right middle lobe were involved throughout. The right inferior lobe was practically normal. The left apex showed a slight involvement. The left lower lobe was normal. Artificial pneumothorax was induced in October, 1915, and within a few weeks' time after this procedure the patient showed great improvement. Injections were continued until the following July. By this time, she had gained 20 pounds and I decided it would be safe to stop the injections. In two months' time, however, she began to have some cough and slight afternoon rise of temperature. There were a few râles in the right upper lung. The right pleural cavity was again injected and the compression has been continued until the present date. She has been without fever and any symptoms of tuberculosis for months, and at the present time I consider her case arrested.

Case 4.—M. H., a man, aged 27, American, single, sailor, reported that this present trouble had begun about a month and a half before the first injection, with cough, night sweats, and loss of weight, appetite and strength. He had been expectorating a considerable amount of purulent sputum. Two days before he was seen, he had a pulmonary hemorrhage of rather large amount. This was followed in about twelve hours by a second hemorrhage of rather large amount. This was followed in about twelve hours by a third hemorrhage. Since that time he had been coughing up a considerable amount of black blood. Examination revealed dulness, and a great many bubbling râles in the left upper lobe. Nitrogen gas was injected at intervals of two days until the lung was collapsed. After this, there was no further hemorrhage, and ten days later the patient reported that he had greatly improved. The highest temperature after the injection was 99.4, and after that time it was normal. He had very little expectoration, the sweats stopped, the appetite improved and he gained a great deal in weight and strength. March 9, the patient had a hemorrhage of about 2 ounces of bright red blood. I injected 1,200 c.c. of nitrogen gas into the left pleural cavity. There was no further hemorrhage, and the improvement has continued until, at the present time, the disease is arrested.

Case 5.—L. A. H., a housewife, aged 28, American, was referred by Dr. Gavin Hamilton. The trouble began in January, 1916, with hemorrhage, after which she began to decline in weight. There was very little expectoration, with afternoon rise of temperature ranging from 99 to 100. Examination revealed a frail woman weighing 93 pounds with tuberculosis of the right upper lobe. The diagnosis was confirmed by the roentgen ray. February 22, artificial pneumothorax of the right pleural cavity was begun. The injections continued without incident until March 10, 1917. In June, 1917, she presented no signs of the disease, had no abnormal temperature, cough nor night sweats, and had gained 28 pounds in weight. The case was arrested.

Case 6.—R. H., a bricklayer, aged 30, American, single, referred by Dr. C. U. Patterson, had been ill with the present trouble since November, 1915. The patient complained of free and purulent expectoration, night sweats, considerable afternoon rise of temperature, and loss of 30 pounds. Examination revealed a man weighing 140 pounds with involvement of the upper and middle lobe and, to some extent, the lower lobe of the right lung. There was a cavity in the lower portion of the right upper lobe. The left upper lobe also was somewhat involved. Artificial pneumothorax of the right pleural cavity was begun, March 19, 1916. Further injections were without incident, and the injections were continued at intervals until April 6, 1917. For many months afterward, this patient had no abnormal temperature, and expectoration gradually ceased. In June, 1917, the patient was at work as a night detective, and he said he felt absolutely well. At that time his weight was 172 pounds, a gain of 32 pounds since the beginning of the treatment.

COMMENT

The decided improvement noted in Case 1 was more than we expected. The man's life was prolonged for months. During this period he was more comfortable than formerly. Patient 2, with fibroid chronic tuberculosis, was temporarily benefited, but the improvement was not permanent. In my opinion, such cases are not suitable for artificial pneumothorax, and should not be treated by this method unless large unilateral cavities with profuse expectoration are present. In our cases of acute pneumonic tuberculosis, the improvement was striking. The patients improved rapidly, showing a cessation of night sweats, a marked lessening of the cough, a stopping of the expectoration, a rapid declination of temperature, and a steady gain in weight and well-being. In five cases, pulmonary hemorrhage was successfully combated, and in three of these the pulmonary process was subsequently arrested. We have departed from the beaten path in advocating artificial pneumothorax in unilaterally involved first-stage cases, as exemplified in Case 5. The result in this case was excellent, and the patient is now well. Case 6 demonstrates a type of pulmonary tuberculosis in which the patient may be greatly benefited by an artificial pneumothorax. As was noted in this case, the improvement was rapid in onset and lasting in duration.

A great deal has been written in regard to the question of technic. I have purposely omitted this feature of the work. I should like to suggest in passing, however, that it is better to inject small amounts of nitrogen gas, from 300 to 500 c.c., at short intervals, than to use larger amounts at longer periods. Several of my earlier patients have received temporary setbacks because I injudiciously used from 1,000 to 1,200 c.c. of gas at single injections. It has seemed to me that pleural effusions have more frequently followed in these cases. On several occasions, high fever with severe vomiting ensued, which, however, ceased in a few days.

No cases of pleural shock, pleural infection, gas embolism, harmful puncture of the lung, or cardiac dilation were encountered. If these dangers were so formidable, this circumstance seems the more striking, because our patients, in many instances, were injected without prolonged preliminary observation, and in every case at the patient's home or in the office. Subcutaneous emphysema was frequently encountered in the earlier cases. But it was never alarming, although in one case the gas infiltrated into the tissues of the neck. We believe that the earlier cases presented this feature because we injected a large amount of gas, and allowed the patients to get out of bed too soon. Excessive coughing will cause this complication, as was demonstrated in one case. The use of a sharp needle for the subsequent refilling injections will aid in obviating subcutaneous emphysema.

In 20 per cent. of the cases treated, pleural effusions occurred. No attempt was made to withdraw this fluid, as the amount was never large. The injections were continued as before, except that smaller amounts were given at longer intervals. We have begun to look on this complication as favorable, because every patient has been benefited when an effusion occurred.

Because of pleural adhesions it was impossible to perform the operation in five of the thirty-two cases. All these five patients are now dead. In three other cases the continuation of the treatment was refused, and only one of these is living. Of the eight untreated patients only one is alive, and he is in very poor condition. Twenty-three of the other twenty-four patients are living. The patient who died (Case 1) was a hopeless third-stage consumptive. As four, or 12.5 per cent., of the total number of cases, were unimproved by the treatment, it was discontinued. Nineteen, or 80 per cent., of the twenty-four patients treated were greatly improved. Of these, six, or 20.5 per cent., were classified as improving, and thirteen, or 54 per cent., as arrested. It is significant that 96 per cent. of the patients treated are living.

The improvement in the patients' clinical symptoms was in most cases very rapid. The fever ceased, or fell considerably, night sweating ceased, the sputum decreased, the appetite improved, and the patient gained rapidly both in strength and weight.

CONCLUSIONS

We feel that a procedure which will bring about an arrest in 44 per cent. of the cases, or 32, in which the method was tried, and 60 per cent. of the cases treated, has a well established place in our therapeutic armamentarium. First-stage cases unilaterally involved should be treated by an artificial pneumothorax, and I am of the opinion that the time is not far distant when it will be more generally done. In the future we should select our cases more carefully, and give the earlier first-stage cases the benefit to be derived from an artificial pneumothorax.

Clay Pipe as a Breast Pump.—According to *Le Nourrisson*, a woman seeking a position at Paris as a wetnurse kept her breasts in good condition by pressing the bowl of a clay pipe over her nipple, and sucking the milk herself through the pipe-stem. This autosuckling breast pump by means of a tobacco pipe was suggested by Mesnard in 1743 to spare fissured nipples.

THE MARGIN OF ERROR IN THE DIAGNOSIS OF NEUROSYPHILIS OF THE PARETIC TYPE

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The study of our errors may injure our vanity, but if honestly made and executed, it proves a healthy "mental catharsis" and materially aids our general understanding. In 1910, Southard[1] reviewed forty-one cases of clinical neurosyphilis of the paretic type that had come to necropsy at the Danvers State Hospital, and found an error of 15 per cent. in those cases that the staff had unanimously considered to be general paralysis of the insane. At the same time, the necropsy reports in 186 cases in which this disease was not considered clinically were studied, and two of these were found, by the plasma cell criterion, to be general paralysis of the insane. The cases considered in Southard's paper were diagnosed before the general application of biologic tests, and it is my present purpose to determine whether this addition to our diagnostic technic has been beneficial, or whether it has made us careless in our clinical examination to such an extent as to vitiate its usefulness.

The accompanying table shows at a glance the important points found in a study of 168 patients admitted to the Warren State Hospital between January, 1913, and January, 1918, and examined at necropsy. For the sake of comparison, figures taken from Southard's paper are placed in an adjoining column.

CLINICAL DIAGNOSIS AND NECROPSY FINDINGS IN NEUROSYPHILIS OF THE PARETIC TYPE

	Darling	Southard
Number of cases studied	168	227
Number of cases unanimously diagnosed as neurosyphilis of the paretic type	45	41
Number of cases unanimously diagnosed as neurosyphilis of the paretic type and proved to be that disease at necropsy	45	35
Number of cases about which opinions were divided, with some favoring neurosyphilis of the paretic type	6	20
Number of cases about which opinions were divided, with some favoring neurosyphilis of the paretic type, and proved at necropsy to be that disease	0	8
Number of cases proved to be neurosyphilis of the paretic type at necropsy, but not diagnosed clinically	0	2

The pathologic diagnoses of these cases are based on records made by Dr. Paul G. Weston, to whom I am indebted for aid in their interpretation, and also for making additional microscopic examinations in all doubtful cases. A final diagnosis of neurosyphilis of the paretic type is here based on the presence of ependymitis, chronic lymphangitis, and varying degrees of pial edema in the gross specimen; with cortical gliosis, perivascular infiltration with plasma and round cells, endothelial proliferation, presence of stab cells and disarrangement of cortical architecture in the microscopic section.

From the table it is seen that all of the forty-five cases unanimously diagnosed as neurosyphilis of the paretic type were proved at necropsy to have been that disease. It is worthy of note that every one of these patients was found to have a positive Wassermann reaction[2] in the spinal fluid at some time, and that all of those admitted after July, 1914,[3] gave a paretic colloidal gold curve[4] when the spinal fluid Wassermann reaction was positive. In several of these cases there were argument and divergence of opinion relative to the possible presence of complicating factors, such as epilepsy, gross sclerotic lesions, and toxic conditions secondary to heart and kidney disease. In spite of this, a definite preference for paresis as the basic condition was expressed by every one present at the conference.

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[1] Southard, E. E.: Jour. Nerv. and Ment. Dis., 1910, **27**, 1.

[2] Weston, P. G.: Jour. Med. Research, 1914, **30**, 377 (Wassermann technic used).

[3] Prior to 1914, the colloidal gold test was not a routine procedure.

[4] Weston, P. G.; Darling, I. A., and Newcomb, P. B.: Am. Jour. Insan., 1915, **71**, 774 (colloidal gold test used).

There were six other cases which some of the staff members believed to be paresis, but concerning which the opinions were not unanimous. When these patients were examined microscopically at necropsy, none of them showed evidences of cerebral syphilis. It is also interesting to observe that five of these six patients failed to give positive serologic signs of syphilis in either the blood or the spinal fluid, and that the sixth patient died before any specimens for laboratory tests could be obtained.

I believe that many errors are made by placing too much dependence on one laboratory examination of the blood and spinal fluid. Several workers have drawn attention to the fact that the blood of a syphilitic will frequently be found negative to the Wassermann reaction at one time and positive at another. The records of the Warren State Hospital show many instances of this and also numerous similar irregularities in the findings in the spinal fluid examinations. Because of this recognized liability to variation in serologic findings, all the physicians presenting cases before the hospital staff have been very careful to have several specimens of blood and spinal fluid examined in all questionable cases before asking the staff to aid in the final classification, and this has, without doubt, aided materially in making accurate diagnoses.

These findings confirm the opinion that I expressed[5] in 1915, namely, that with the aid of modern laboratory methods, probably 100 per cent. accuracy could be obtained. It does not necessarily follow that this high percentage could be maintained indefinitely; but the facts presented in this study prove that the error in diagnosing neurosyphilis of the paretic type can be made almost negligible if a careful clinical examination is combined with repeated serologic tests made by a competent laboratory worker.

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[5] Weston, P. G., and Darling, I. A.: Am. Jour. Insan., 1915, 72, 325.

School Lunches.—Along with other sociologic problems of increased importance during the war, the subject of school lunches for children in the large cities, particularly, has been the subject of augmented interest. The New York School Lunch Committee, maintained by the New York Association for Improving the Condition of the Poor, has published information concerning the work of the committee in New York, where lunches are provided in thirty-five of the 208 schools of the city. On account of the increased cost of everything, the price of the dishes of these lunches has had to be raised somewhat, and still the income has not equaled the expenditure for food and service, to say nothing of the cost of equipment. The income from lunches in thirty-four of the schools during the period from 1916 to 1917 was $38,369.81, while the operating costs, including capital expenditures, amounted to over $60,000, leaving a deficit of nearly $22,000. The need for this work has been demonstrated, and its good results have been apparent not only in the benefit derived by the children, but also in the example set for the parents at home, where diet conditions have been improved. The committee says that there is an almost universal belief among those who have seriously considered the problem that school lunch work is school work and should be taken over by the board of education. Heretofore, the funds have come from public-spirited citizens.

THE PRESENCE OF SPIROCHETES IN THE KIDNEY *

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AND

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In May, 1917, at Tokyo, Futaki demonstrated spirochetes in the urine and the renal casts of typhus-infected kidneys, and reported them as the specific causative agent of typhus fever. Two months later, Futaki's report was discussed by Miyashima, Kusama and Koga. Miyashima and Kusama had not been able to find any spirochetes in the kidneys or other organs of experimental typhus-infected animals (rabbits and guinea-pigs). Koga had found many spirochetes (the *Spirochaeta smegmatis?*) in the urine of patients suffering from different diseases and also in healthy persons, but he could not find any points in which morphologically the spirochetes differed from the spirochetes of Futaki. There was, however, a stronger pulse than in the presence of spirochetes in the kidneys. For control examination, we observed many kidneys, which were mostly affected

TABLE 1.—CASES EXAMINED AT NECROPSY

No.	Age	Sex*	Diseases	Spirochete
1	10	♀	*Chronic nephritis*	+
2	18	♀	Tuberculous appendicitis; caries of ileum.	—
3	20	♀	*Acute nephritis; uremia*	++
4	20	♂	Chronic nephritis	+
5	20	♂	Pulmonary tuberculosis	—
6	21	♂	Tetanus	—
7	22	♂	Suppurative appendicitis, peritonitis and *acute nephritis*	—
8	23	♂	Nephrolithiasis; uremia; hemorrhagic nephritis	+
9	25	♀	Pulmonary tuberculosis; acute nephritis	+
10	27	♂	Chronic nephritis	+
11	28	♀	Chronic parenchymatous nephritis	++
12	28	♀	Suppurative *oophoritis*	+
13	28	♀	Suppurative nephritis	+
14	29	♂	*Valvular endocarditis*	+
15	30	♂	Chronic nephritis	—
16	31	♂	*Valvular endocarditis*	—
17	32	♀	Multiple cystic kidney	++
18	37	♀	Diabetes mellitus; *chronic nephritis*	+
19	38	♀	Puerperal *nephritis*	—
20	40	♂	*Parenchymatous nephritis*	+
21	41	♀	*Chronic nephritis*	+
22	44	♀	Acute nephritis; *septicemia*	—
23	45	♀	Multiple cicatrization of the kidney	—
24	46	♂	*Contracted kidney; pyemia*	—
25	47	♂	Pulmonary tuberculosis; chronic parenchymatous nephritis	—
26	47	♂	Pulmonary tuberculosis; acute parenchymatous nephritis	+
27	47	♂	Hepatic cirrhosis; hepatic carcinoma	—
28	54	♂	Lead intoxication; chronic nephritis	—
29	54	♂	Hepatic carcinoma; contracted kidney	—
30	54	♂	Ulcerative endocarditis of aortic valves	+
31	54	♂	Hepatic cirrhosis	—
32	55	♀	Chronic nephritis	—
33	61	♂	[illegible] nephritis	+
34	61	♂	[illegible]	—
35	61	♂	[illegible]	+
36	62	♂	Gastric carcinoma; chronic nephritis	+
37	64	♂	Contracted kidney	+
38	65	♂	Suppurative nephritis	+
39	69	♀	Contracted kidney	+
40	72	♂	Cerebral apoplexy; chronic nephritis	—
41	72	♂	Sarcoma of the leg; phlegmon; hemorrhagic nephritis	+
42	76	♀	Contracted kidney	—
43	77	♀	Chronic nephritis	—
44	80	♀	Valvular endocarditis; congestive induration of the kidney	+
45	..	..	Acute parenchymatous nephritis	—
46	..	..	Contracted kidney	—
47	..	..	Contracted kidney	—
48	..	..	Congestive induration of the kidney	—
49	..	..	*Multiple cystic kidney*	++
50	..	..	Contracted kidney	—

* In this column, ♂ denotes male and ♀ female.

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by acute and chronic nephritis, in which casts were present. These we stained by Levaditi's method. We found many silver-stained spirochete-like bodies in the casts of kidneys in different diseases. It may be said, therefore, that the question of the presence of spirochetes in the kidneys in various diseases other than typhus fever is such an interesting problem that more attention should be paid to it. We have examined many kidneys in both dead and living bodies harboring various diseases, and we here record the results of our observations.

We have examined fifty kidneys of dead bodies and twenty-six of living bodies in the course of operation and found spirochetes in twenty-five of the former and in fifteen of the latter. The results are set forth in the accompanying tables.

The spirochetes in the kidney were found mostly in hyaline casts, hyaline clots and also in the granular substance of the cortex, but not so many were found in the medullary substance. We have also noticed two cases of hyaline clots in Bowman's capsule, and two cases of homogeneous and granular casts in congenitally cystic kidneys. In contracted kidneys, we found spirochetes in the so-called cysts of retention. The location of the spirochetes in the casts of the urinary tubules was not always constant. In the same cases, we occasionally found only hyaline clots, but no other clots, and in from ten to twenty preparations we also found a few of them.

TABLE 2.—CASES EXAMINED AT OPERATION

No.	Age	Sex*	Diseases	Spirochete
1	20	♀	Left tuberculous kidney	+
2	24	♂	Left tuberculous kidney	—
3	27	♀	Right tuberculous kidney	—
4	28	♂	Left tuberculous kidney	+
5	31	♀	Tuberculous kidney	—
6	34	♀	Right tuberculous kidney	+
7	35	♂	Left tuberculous kidney	+
8	38	♂	Nephrolithiasis	—
9	40	♀	Left tuberculous kidney	+
10	41	♂	Right tuberculous kidney	+
11	54	♀	Left tuberculous kidney	+
12	..	♂	Right tuberculous kidney	+
13	..	♂	Right tuberculous kidney	+
14	..	♀	Right tuberculous kidney	—
15	..	..	Left tuberculous kidney	+
16	..	♀	Hydronephrosis	+
17	..	♀	Left tuberculous kidney	—
18	..	♂	Right tuberculous kidney	+
19	..	♂	Tuberculous kidney	—
20	..	♂	Left tuberculous kidney	+
21	..	♂	Tuberculous kidney	+
22	..	..	Tuberculous kidney	—
23	..	♂	Left tuberculous kidney	—
24	..	♂	Right tuberculous kidney	—
25	..	♂	Tuberculous kidney	+
26	..	..	Right tuberculous kidney	—

* In this column, ♂ denotes male and ♀ female.

The spirochetes we found we stained a deep black, according to Levaditi's method. They formed delicate spiral curved organisms, their average length being from 6 to 10 microns. The smaller forms were from 4 to 5 microns in length. Organisms 22 microns long have been observed, both ends of which are pointed. Morphologically, they may be divided into three types. Type I is much like the *Spirochaeta pallida*, particularly in its spiral form. Type II shows an irregularly curved spiral, while Type III is much broader than Type I or II, and its curves are much coarser and less regular.

What is the origin of our spiral bodies? If they were true spirochetes, they could be determined only by more minute examination, namely, by dark field illumination as living bodies and by Giemsa's staining as final objects. Our examinations, however, have not yet given satisfactory results. Occasionally we have noticed brown-stained irregular spiral forms in the silver-stained preparation, but it cannot be said that the mere finding of spiral forms is an evidence of the presence of true spirochetes. The presence of the spiral bodies in question which were morphologically difficult to differentiate from true spirochetes, without being related to any definite disease, is a very important fact.

In 1912 Le Play, Sézary and Vallery-Radot[1] found spirochetes in the kidney. Their report is very interesting, as the spirochetes they found seem to resemble our spirochetes. Le Play examined the kidneys in question according to Belltali and Vorpino's method and found black-stained filament bodies in the casts and exudate of the excretory and secretory ducts in cases of tuberculosis, arteriosclerosis, and lead intoxication associated with acute or chronic nephritis. There were, however, absolutely no suspicious signs of any syphilitic changes in the history of the case, nor in the Wassermann reaction, nor at the necropsy. The filament bodies much resembled *Spirochaeta pallida* and were found mostly isolated or else in groups in the cortical substance, but they were not found at all in the interstitial tissue, glomeruli or blood vessels. They were named *Pseudotreponema*. They were very much like the *Spirochaeta pallida* found in the urine of syphilitic patients, as reported by Hirschberg, McLennan, Dreyer and Toepel, and Barth and Michant; also in syphilitic kidneys, as reported by Le Play and Sézary, and by Faroy. For this reason, Le Play said that attention must be paid to spiral bodies in the urine and the kidneys. Ours and Le Play's spirochetes very much resemble one another and cannot be found elsewhere. It is difficult to assert, therefore, that the spirochetes found in the urine or in the renal casts are the specific causative agents in definite diseases and also in other spirochetal diseases. By means of dark field illumination and Giemsa's staining method, we examined centrifugalized casts in the urine of several nephritic patients and experimental nephritic animals, but none of the observations brought any satisfactory results.

SUMMARY

1. By Levaditi's method we have found many spirochetes in the hyaline casts and hyaline substances in urinary tubules, without relation to any diseases. Further and more minute attention must therefore be paid to the study of spirochetes in the kidneys.
2. Our spirochetes are found not only in the casts, but also in the hyaline or granular substances located in the cortical substances, in urinary tubules, in Bowman's capsule, and in cysts. But they have not yet been found in the blood vessels, in the interstitial tissues, or in the cells.
3. Our spirochetes may be divided into three types.

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[1] Le Play, A.; Sézary, A., and Vallery-Radot, P.: Compt. rend. Soc. de biol., 1912, 73, 635.

Obligation to Care for the Child.—The war cloud dims our vision of the facts at home. But in war or peace, there is this constant struggle for a living and a life. Today it is the mother in her distress that needs help and care; tomorrow it is the infant new-born; the third day it is the talking and walking child. For, whenever the one or the other is found, the tale of inadequate service, of danger, of damage, of disease and death is nearly the same, varying a little in local color but never in substance.—Dr. Leslie Mackenzie, Report on Scotland to Carnegie United Kingdom Trust.

Clinical Notes, Suggestions, and New Instruments

REPORT OF A CASE OF GONOCOCCIC ENDOCARDITIS

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The rare occurrence and the difficulty of establishing the diagnosis would seem to warrant the reporting of this case of gonorrheal endocarditis.

History.—Private F., aged 19, admitted to the medical service of the Post Hospital, Plattsburg Barracks, N. Y., Sept. 19, 1917, complained of frequency of urination accompanied by a sense of burning, dull pain in the lumbar region, painful erections, and a profuse, purulent urethral discharge. The patient gave a definite history of exposure seven days prior to admission, and stated that he did not report for the regulation venereal prophylactic treatment. The fourth day after exposure he noticed a swelling of the meatus urinarius, and experienced a stinging sensation on urination. The following day the pain grew worse, and milking of the penis revealed a drop of mucopurulent discharge. Subsequently the discharge became more profuse and purulent, and chordee developed, which established clinically the outward picture of acute gonorrhea. The previous medical history was negative.

Physical Examination.—There was a profuse, purulent urethral discharge. The penis was swollen and tender. The testicles were apparently normal. Examination of the heart, lungs and joints revealed no external evidence of the infection. Urinalysis revealed a large amount of albumin, and an abundance of leukocytes. A smear of the discharge stained by Gram's method showed many polymorphonuclears, several of which were crowded full, some even bursting, with definite gram-negative, biscuit-shaped diplococci. Very few extracellular organisms were observed. A planting of the discharge was made to a plate of 5 per cent. glucose-agar enriched with one part in ten of ascitic fluid; and a second planting was made to a plate of starch-agar prepared according to Vedder's formula.[1] The blood pressure was normal. A leukocytic count gave 13,800 leukocytes, with 74 per cent. polymorphonuclear neutrophils. A specimen of blood was taken for the gonococcic complement fixation test, which at a subsequent date was reported positive.

Clinical Progress.—The usual clinical course showed no interruptions, the discharge continuing for several days. Smears stained by Gram's method still showed the presence of gram-negative intracellular diplococci. The other symptoms gradually subsided, the leukocyte count and the temperature returning to normal. The patient was up and about the ward for two or three days when he began to complain of pain in the right ankle, with swelling and tenderness, which later became so severe that he was again put to bed. There was a slight rise of temperature, and the leukocyte count increased to 14,000. The symptoms grew rapidly worse; the periarticular tissues becoming swollen and edematous, and there were pain and tenderness, marked redness, and impairment of function. The intense redness and extreme sensitiveness of acute articular rheumatism, however, were not present. There were no sweats; the temperature ranged between 99 and 102 F., the pulse averaged 80 per minute, and the respirations were practically normal. Urinalysis at this time revealed gonorrheal shreds, a trace of albumin, a few white blood cells, hyaline casts, and squamous and round celled epitheliums. The clinical symptoms continued in the ankle three days and began to subside, only to reappear, however, with equal severity. a few days later in the right elbow. At no time was there any effusion in the joint, and after the disappearance of the pain and swelling, there remained no evidence of former involvement. The clinical picture of the condition at the elbow was similar in all respects to the one at the ankle; and the migratory character of the disease was shown in the subsequent involvement of the right shoulder, right wrist and left knee. October 10, ten days after the patient had taken to his bed with arthritis, he had a slight chill which was followed by a sudden rise of temperature, weakness and dyspnea, and some precordial discomfort. Examination of the heart elicited a faint blowing systolic murmur at the apex. The pulse was arrhythmic, soft, compressible, and showed no dichrotism. A count of the white cells gave 17,000, with 78 per cent. polymorphonuclears. A smear from the urethra still showed a few gram-negative diplococci. The symptoms referable to the knee joint, though less severe, still persisted. The progress of the case showed slight fluctuations, but nothing eventful for a period of ten days. A comparison of the former cardiac findings with the present demonstrated a marked loss of muscle tonus, the booming quality of the first sound being replaced by a feeble, irregular cardiac pulsation. The characteristic variations of the murmur were well marked. At no time was the temperature above 103 F. Blood count revealed a polymorphonuclear leukocytosis. Blood culture was negative. The urine contained pus and an increased amount of albumin. During the next few days the patient improved slightly, but this proved to be only temporary, as he soon lapsed into his former state, the temperature increasing to 103.8 F., the respirations becoming shallow and increased in frequency, and the pulse rapid, irregular and easily compressible. The cardiac sounds grew more feeble and distant, and the murmur was at times inaudible. He grew progressively worse during the following forty-eight hours, expectorated frothy sputum, became orthopneic and profoundly toxic, and died.

Treatment.—At first remedial measures were directed toward the clearing up of the urethral discharge. Later the arthritis was combated by the use of polyvalent gonococcic vaccine (Army Medical School) beginning with 0.5 c.c. as an initial dose and increasing to 1 c.c. given at four day intervals for five doses. Later, on the theory of the nonspecificity of proteins, triple typhoid was substituted. Hexamethylenamin and salicylates were administered in appropriate doses, and a course of hydrotherapy followed. Despite the recognized cardiac therapy, the termination of the case was inevitable.

Laboratory Findings.—After twenty-four hours' incubation at 37.5 C., the glucose-ascitic-agar, and starch-agar plates were examined and the most suggestive looking colonies picked and transferred to tubes of blood agar, and Vedder's starch medium. Similar colonies were picked and stained and found to contain biscuit-shaped gram-negative diplococci. The following day the tubes were examined, and those found to contain only the gonococcus-like organisms in pure culture were used as a stock culture from which to make subsequent study. The cultural characteristics exhibited by this organism, as it was carried through the various mediums, were apparently morphologically identical with the gonococcus. Necropsy being refused, a few cubic centimeters of the heart's blood were aspirated and plantings made to the mediums mentioned above. After twenty-four hours' incubation, the suggestive colonies that appeared on the surface of the mediums were carefully studied by carrying them through the various mediums, and were found to correspond identically with the organism isolated from the urethral discharge.

Return Cases of Diphtheria.—J. Langer recently analyzed in the *Jahrbuch für Kinderheilkunde* the experiences with 7,701 cases of diphtheria in recent years at the Graz and Prague hospitals. There were ninety-seven return cases, a total of 1.5 per cent. The children were kept in the hospital until the secretions of nose and throat gave negative findings on one or more examinations. The persisting carriers, he states, should be isolated in a convalescent home and the throat and nose treated with pyocyanase, sodium sozoiodate, hydrogen dioxid, etc. This same treatment should be applied to the persons in the environment of a case, as in his experience, from 6 to 10 per cent. of the contacts harbored the bacilli. His article is summarized in the *Correspondenz-Blatt.*

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[1] Vedder, E. B.: Jour. Infectious Dis., 1915, **16**, 385.

Military Medicine and Surgery

A ROENTGEN STUDY OF ONE THOUSAND CHESTS, AT CAMP DEVENS, MASS.

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During the six months from Oct. 12, 1917, to April 19, 1918, more than 1,000 chests have been examined roentgenologically in the roentgen-ray laboratory at Camp Devens, Mass. The findings in these cases have proved interesting enough to warrant summarization, and it is my purpose in this paper to give an account of the study. Some phases of the roentgen interpretation of pulmonary disorders here presented are not new, and the material presented is merely corroborative. Some of the phases, however, are practically new, and the ideas expressed are based on material previously not available. Where generalities seem to have been drawn without sufficient substantiation, I hope to establish and extend these conclusions by further and more detailed study.

The patients dealt with in this study are men between the ages of 21 and 30 — officers and enlisted men of the Army. A few rare cases of officers above the age of 30 are included in this study. All these men had passed the preliminary examination of local physicians. They have been studied in our laboratory only on the request of medical officers in this camp either because of well defined lesions or because of suspected pulmonary disorder. Hence our statistics show a relatively small number of normal respiratory tracts.

In practically every case reported in this paper, the roentgen findings have been substantiated by the physical and clinical findings of examining surgeons. Daily consultation with the clinicians has assured me that the roentgen signs here described are definite and constant for the conditions to which they are ascribed. Doubtful cases have not been made a part of this discussion unless the uncertainty of interpretation has been distinctly pointed out.

Roentgenograms were made in every case here recorded, the roentgenoscope having been used for further study wherever necessary.

Pulmonary disorders have been found to occur as shown in Table 1. In this classification several cases in which complications occurred are tabulated under each of the conditions found. Hence the total number of cases is found to be somewhat greater than the total number of individuals examined.

TABLE 1.—OCCURRENCE OF PULMONARY DISORDERS

	No.
Individuals examined	1,259
No disease found	405
Tuberculosis	368
Chronic bronchitis	49
Bronchopneumonia	61
Lobar *pneumonia*	258
Fibrous pleurisy	124
Interlobar pleurisy	3
Pleurisy with effusion	25
Hydropneumothorax	3
Empyema	7
Emphysema	2
Enlarged mediastinal glands	1

TUBERCULOSIS

Pulmonary tuberculosis is demonstrable on the roentgenogram even in its earliest stages. Success in demonstrating the tuberculous lesion depends on the care in the technic and on the keenness of the interpreter.

The most definite signs of active pulmonary tuberculosis as seen on the roentgenogram are soft, fuzzy, flaky shadows in the areas occupied by the linear markings of the normal lungs. When these shadows are found at the periphery and are mottled as if broken up with shadows indicative of peribronchial thickening leading to them, we consider them characteristic of the acute, active tuberculous lesions. The soft shadows are interpreted as tubercles with areas of congestion about them, and the thickening of the trunks as lymphatics draining the infected area. Soft mottling in the apexes with peribronchial thickening leading to it we consider the most definite sign of active phthisis presented on the roentgenogram.

When, however, the shadows appear dense and are accompanied by nodular, well defined, clean cut peribronchial thickening which extends to the periphery, we consider them indicative of healed, or at least inactive, tuberculosis.

While these two extremes are readily detectable in the roentgenogram, it is often very difficult to interpret less marked cases. Often the shadows are appreciated only by well trained eyes, and much practice is necessary to give the examiner any degree of skill in the interpretation of tuberculosis in ill defined cases.

With regard to the relative frequency of occurrence of the tuberculous lesion, the lungs may conveniently be divided into three areas:

1. The upper region from the apex to the hilum is considered the tuberculous area. In this region by far the greatest number of infections are found. Ninety-three per cent. of the positive cases studied showed the lesion in this region; in 53 per cent. of these the lesion was in the right upper lobe; in 28 per cent. the lesion was found in the left upper lobe; in 11 per cent. there were lesions in both upper lobes.
2. The middle region from the hilum to the fifth rib in front is considered the intermediate region in which tuberculosis is occasionally found. Less than 10 per cent. of our positive cases showed tuberculosis in this region.
3. The lower region from the fifth rib to the diaphragm is considered the nontuberculous area where lesions are rarely found. Among all the 368 positive cases, only five showed shadows consistent with tuberculosis in the lower lobes. Two of these had lesions throughout all parts of both lungs; one had lesions in the upper, middle and lower lobes on the right side; one had lesions in the upper and lower lobes on both sides; one had a doubtful localized area of infection in the right lower lobe not verified by the clinicians.

Reference to Table 2 shows that more than half of the cases suspected of tuberculosis were found to be negative. In making an interpretation of normal lungs, it is appreciated that no lungs are absolutely free from some pathologic condition. The term is used to describe that condition on the roentgenogram consistent with shadows shown on plates made of individuals with no symptoms and with normal physical and physiologic signs. In some cases lesions were found in several regions of the lungs. For the sake of convenience in classification these are recorded separately in the table. For this reason the total number of instances recorded is greater than the actual number of cases.

I do not consider opacity in one of the apexes as compared with the other a significant factor in interpretation of pulmonary tuberculosis. This difference in opacity may be caused by a variation in penetrability on the two sides due to asymmetrical density of the sternomastoid muscles, to thickened pleura, or to a contracted apex.

Our study shows that hilum thickening cannot be considered a safe criterion on which to base a suspicion of pulmonary tuberculosis; for while an increase in the area and density of the hilum shadow may be very common in cases in which a definite pathologic condition is found, there are many cases which show marked thickening at the hilum with no signs of infection in the lungs. Seventy-nine of our cases showed marked ity in both hila with no evidence of tuberculosis the parenchyma of the lungs. This suggests the possibility that there is a good resistance to tuberculosis at the hilum and that these cases represent those in which the infection was inhibited at this place. The hilum resistance is emphasized by the fact that definite hilum tuberculosis was found in only four of the cases studied.

I am heartily in accord with the principle that pulmonary tuberculosis can be fairly and definitely diagnosed only with the combined consideration of clinical, physical and roentgen findings. There are instances, however, in which the roentgen signs are decisive even though physical signs are not found. Especially is this true in the cases of deep seated infections, and incipient tuberculosis in a part of the lungs other than the seat of the main invaded area. The fact that many tuberculous lesions are not found on physical examination, and that lesions are frequently larger in extent than determined by physical examination, would lead to the generalization that many cases of chronic fibroid tuberculosis give few or at least very indefinite signs on auscultation or percussion.

TABLE 2.—LOCATION OF TUBERCULOUS LESIONS

	No.	Per Cent.	
Cases examined for tuberculosis	773	....	
Practically normal lungs	326	....	
Hilum markedly thickened, but no signs of tuberculosis	79	....	
Total number of negative cases	405	....	
Total number of positive cases	368	....	
Tuberculosis, active, right upper lobe	121	31.9	53.2
Tuberculosis, inactive, right upper lobe	81	21.3	
Tuberculosis, active, left upper lobe	70	18.	28.5
Tuberculosis, inactive, left upper lobe	40	10.5	
Tuberculosis, active, both upper lobes	32	8.4	11.
Tuberculosis, inactive, both upper lobes	10	2.6	
Tuberculosis, active, right upper and middle lobes	6	1.6	
Tuberculosis, inactive, right upper and middle lobes	3	.79	
Tuberculosis, active, right middle lobe	4	1	
Tuberculosis, inactive, right middle lobe	2	.52	
Tuberculosis, active, right upper, middle and lower	1	.26	
Tuberculosis, active, both hila	2	.52	
Tuberculosis, active, left hilum	3	.79	
Tuberculosis, active, both lower lobes	1	.26	
Tuberculosis, active, all parts of lungs	2	.52	
Tuberculosis, doubtful, right lower lobe	1	.26	
Tuberculosis in upper area	366	93.	
Tuberculosis in middle area	23	6.	
Tuberculosis in lower area	5	1.	

The fan-shaped thickening of the ascending trunks as an indication of the tuberculous lesion has not proved helpful in our interpretation of tuberculosis. The roentgen picture of tuberculous lesions varies so much that it is not safe to describe it in any very definite manner.

In examining roentgenograms of pneumonia patients made shortly after resolution, shadows are seen which appear strikingly similar to those found in pulmonary tuberculosis. I believe that these shadows are caused by sheets of fibrin that are deposited on the pleura at the time of infection. Moreover, when the lobar pneumonia is complicated with a streptococcus infection, on the postpneumonia roentgenograms, along the ascending trunks and in the apexes, there appear shadows identical with those that occur in pulmonary tuberculosis. These gradually disappear and are not found after several weeks. It is important not to make the mistake of interpreting these shadows as tuberculous lesions, and in order to guard against the possibility of such an error the examiner should know definitely whether or not there is a history of recent pneumonia.

LOBAR PNEUMONIA

The roentgenogram has proved to be an important factor in the diagnosis of lobar pneumonia and in following its development. It has been found to be of extreme importance in differential diagnosis and in the detection of effusion. Consequently this study materialized when it was learned that the patients could be transported to the roentgen-ray laboratory without suffering the slightest ill effects. Application of the utmost care in handling the patients has made it possible to roentgenograph them without causing them mental or physical indisposition. Attending surgeons reported in all cases that no patient ever was found to have shown any ill effects resulting from the moving necessary to make the roentgenograms. The patients were placed on operating trucks, drawn to the laboratory through closed corridors, roentgenographed on the trucks, and returned to their wards immediately, the entire process covering not more than ten minutes.

Two hundred and fifty-eight cases of lobar pneumonia have been studied, and these encourage some very definite generalities. The roentgen signs of lobar pneumonia are: (1) marked accentuation of linear shadows from the hila to the apexes, which we propose to call vascular congestion; (2) marked enlargement of the heart shadow; (3) typical shadow of the localized area of consolidation in the lungs, and (4) high diaphragm on the affected side.

1. The vascular congestion appears especially in the upper lobes as soft linear markings with distinct bifurcations, which are different in appearance from the thickened ascending trunks of bronchitis and the peribronchial thickening of tuberculosis in being thicker, smoother, showing more definite branching, and being always definitely bilateral.

These shadows are interpreted as due to the congestion of blood vessels along the bronchi. They have the characteristic appearance of congested blood vessels, and depict what may be conveniently called an acute congestion of the lungs. These shadows also represent a thickening of the lymphatic vessels in increased drainage. The vascular congestion was found in all the 258 cases examined, excepting four, one a very early case not studied further, one a case of the abortive type quickly resolving, and two peculiar cases which showed neither the thickened ascending shadows nor the enlarged heart but only the area of consolidation, nontoxic cases.

The markings in question appear early in incipient pneumonia, and disappear early in resolution. They persist occasionally in cases in which no consolidation appears. In such instances these shadows persisting in the upper lobes and extending into the apexes are apt to be confused with the shadows indicative of tuberculosis. Their persistence sometimes for months makes their interpretation all the more confusing. Clinical history and repeated roentgenograms are valuable in these cases. However, in the majority of cases the shadows indicative of vascular congestion disappear early in resolution.

2. The heart is found to be enlarged both to the right and to the left. Only the right auricle, the left auricle and the left ventricle are distinguishable on the roentgenogram. Enlargement to the left is probably due to increase in size of the right ventricle overlapping the left ventricle, and the apical impulse is assumed to be that of the right ventricle rather than of the left ventricle, so that the enlargement to the left is due to the shadow cast by the right and left ventricles together.

The enlarged heart has been found in every case studied except two. These cases showed the area of consolidation in the lungs, but showed no enlargement of the heart and no vascular congestion, appearing to be cases in which there was only a slight degree of toxicity.

The heart enlarges early. The enlarged heart, with the vascular thickening, has been found in many of the cases before any signs of consolidation have appeared. It seems as though the toxins of the pneumococcus affect the myocardium definitely before localized manifestations in the lungs appear. Besides toxemia, the pulmonary consolidation and hyperpyrexia have been considered as causes of the enlarged heart. The early enlargement detected by the roentgenogram, however, seems to show that the toxemia is the most important factor in the enlargement of the heart.

It is possible that the enlarged heart occurs in other toxemias, though this has not yet been conclusively demonstrated. However, with vascular congestion in the upper lobes, this enlargement is a definite sign of beginning lobar pneumonia. This is clearly demonstrated in cases in which there are definite clinical signs of pneumonia, but in which no consolidation is found. In these cases the roentgen diagnosis is made on the two signs in question.

The cardiac enlargement persists for some time after the consolidation has cleared up and the patient has apparently recovered from the attack. This persistence varies with individuals. I am now making a study of the hearts of patients recuperating from pneumonia. The patients are examined at intervals of one week, and tracings of the heart shadow are made on glass with the roentgenoscope. These tracings, it is admitted, are not as accurate as the seven foot plates, but I believe that they are accurate enough for a study of the relative size at intervals of the same heart. Stature, size of chest, height and weight are factors considered in this study. It appears that the heart remains enlarged for several weeks (varying from four to eight weeks) after all evidence of definite involvement of the lungs has disappeared physically, clinically and roentgenographically. The patients are short of breath and show a rapid pulse with exertion as long as the heart is enlarged. In fact, this inconvenience to the patients when they were supposed to be fit for duty caused their return to the hospital and suggested this study. Clinically, these hearts give no evidence of valvular disease.

Weekly examinations of fifty such cases have been made extending over eight or ten weeks. It was found that in 50 per cent. of these cases the heart continued to enlarge slightly during the first, second and third weeks following discharge from the hospital, after which it gradually assumed its normal proportions. In the other 50 per cent. the heart was found to have decreased in size slightly each week until the normal size was reached, or to have remained unchanged in size for several weeks, finally diminishing gradually to the normal size. The unexpected increase in size of the already enlarged heart during convalescence was probably due to the fact that a strain was put on the heart too soon; but it has been impossible to secure satisfactory data on this point. None of these men were assigned to active duties during this time, but it is possible that they participated in exercises to an extent sufficiently strenuous to embarrass the already weakened cardiac muscles. There is now being developed at this camp a series of graduated exercises for recuperating pneumonia patients, the purposes of which are to strengthen these weakened hearts and to determine more definitely when the men are actually fit for vigorous duty.

3. Consolidation in the lung shows as a definitely localized homogeneous patch varying in density from complete opacity to transluscency. The consolidation may originate near the median line, in which event it may or may not extend to the periphery, or it may be found at the periphery not extending to the inner border of the lung.

The location of the consolidation in the 258 cases studied is summarized in Table 3. Of the 258 cases examined, thirty-one showed no consolidation in any part of the lungs, though the clinical symptoms were definite for lobar pneumonia, the crisis appearing early. No physical signs of consolidation were made out. In these cases the vascular thickening and the enlarged heart were found to be just as typical as in the cases with definite consolidation. Several examinations at intervals of two days showed that no consolidation ever appeared. These findings are in accordance with the idea that the symptoms of pneumonia are dependent more on toxemia than on the extent of pulmonary involvement.

TABLE 3.—LOCATION OF CONSOLIDATION

Area Involved	No.
Both lower lobes	5
Right lower lobe	86
Right upper lobe	17
Right middle lobe	8
Right upper and middle lobes	2
Right middle and lower lobes	5
Right upper, middle and lower lobes	2
Left lower lobe	93
Left upper lobe	6
Left upper and lower lobes	2
Root of left lung	1
No consolidation	31

In several cases consolidation was shown roentgenographically before it was demonstrable by physical signs.

The extension of the consolidation from a small patch to a larger one and from one lobe to another was observed in several of our cases.

Several examinations of the same cases at intervals have led us to believe that the variation in amount of tissue involved in consolidation, and the change in location of the consolidated tissues, may be readily demonstrated roentgenographically.

During resolution, linear shadows are seen traversing the affected area and sometimes running beyond it. These are probably due to the thickening along the bronchi caused by some of the exudate, which has not absorbed, and has been transformed into dense, fibrous masses. These shadows may suggest the fibrosis of chronic tuberculosis. When they are found to have changed in position on several plates or when they finally clear up, it is safe to assume that no tuberculosis is indicated.

The question of cirrhosis of the lung in some of the cases of delayed resolution is now being studied in our laboratory. The evidence from cases thus far observed leads us to believe that cirrhosis of the lungs occurs in some cases.

4. The diaphragm on the affected side, as in other pulmonary disorders, is usually relatively higher than on the unaffected side. For some time the diaphragm on this side remains impaired in its excursion. In some cases after resolution the diaphragm appears irregular on the affected side, appearing to have a fixed point. Roentgenoscopically the diaphragm is fixed or else it has a limited excursion as compared with the nonpathologic side. In some cases, distinct bands of adhesions have been seen extending from the pleura to the diaphragm, limiting its motion.

That the elevation of the diaphragm cannot be used as a definite criterion for predicting the side in which consolidation is to occur has been clearly demonstrated by many of our cases in which the diaphragm was found to be relatively higher not on the affected side but on the unaffected side. The facts that in some of these cases the patients complained of pleurisy pain on the side opposite the consolidation, and that in three such cases the pneumonia was followed by a pleuritic effusion on the side opposite that in which consolidation occurred, encourage the suggestion that the high diaphragm on the side opposite the consolidation is an indication of pleurisy; but our statistics are too meager for a bold presentation of this position.

FLUID WITH LOBAR PNEUMONIA

In the presence of consolidation it is difficult to determine when fluid is present in sufficient amount to demand aspiration. The fluid does not appear the same on the roentgenogram as in pleurisy with effusion, when the patient is roentgenographed in the prone position. Instead of the typical S-shaped shadow found in simple pleurisy with effusion, the fluid in pneumonia seems to gravitate to the posterior part of the thorax, giving only a very faint shadow over the entire side, which may easily escape detection. This appears to be due to the fact that the portion of the lung solidified by the pneumonia makes compression of the lung impossible; and owing to the resistance offered by this mass, the fluid spreads out over the whole thorax. The difficulty thus presented has been obviated to some extent by making the roentgenogram with the patient in a semiupright position. The fluid then gravitates to the lower part of the chest and may be more readily seen. In case the fluid is purulent, as in empyema, reasonable time must be allowed for it to gravitate.

In our series of lobar pneumonia, pleuritic effusion occurred early in many cases, often by the second or third day. Thickened interlobar pleura is often seen and may be so dense as to suggest fluid between the lobes.

BRONCHOPNEUMONIA

It has been quite generally supposed that bronchopneumonia is a bilateral disease. Our study has shown that it is more commonly unilateral. This is shown by reference to Table 4.

Signs of vascular congestion in the upper lobes are not so marked and certainly not so constant as in lobar pneumonia.

The heart is sometimes slightly enlarged, but never to the extent found in lobar pneumonia, and often not at all.

The localized area of consolidation appears more as a mottling than as a homogeneous shadow as in lobar pneumonia. Figuratively, the picture of the infected area in bronchopneumonia seems to have been smeared on the plate with a worn-out brush, while in lobar pneumonia the area of consolidation seems to have been blown on the plate with an atomizer.

The pleura does not seem to be involved in bronchopneumonia nearly as much as in lobar; a thickened pleura is seldom seen.

TABLE 4.—LOCATION OF BRONCHOPNEUMONIA

	No.
Cases observed	61
Bronchopneumonia, both lower lobes	20
Bronchopneumonia, right lower lobe	27
Bronchopneumonia, left lower lobe	14

Several peculiar cases of bronchopneumonia were discovered in the course of this study. The patients, most of them officers, were not indisposed enough to take advantage of a ward bed, but were troubled with a persistent cough, weakness, and slight elevation of temperature. The roentgenograms revealed that these were typical cases of bronchopneumonia, the majority of which were localized in one or both of the lower lobes. Resolution in these cases was slow, the shadows persisting for several weeks.

SUMMARY

I. Pulmonary Tuberculosis:

1. Pulmonary tuberculosis is demonstrable on the roentgenogram even in its earliest stages. It is difficult to describe concisely the appearance of shadows that will enable the roentgenologist definitely to interpret active and inactive tuberculosis. One can only describe what in general is seen in well defined cases. The specialist instinctively learns to detect these shadows by individual methods.

2. The lungs may be divided into three regions with regard to the occurrence of pulmonary tuberculosis: the upper region, in which tuberculosis is commonly found; the middle region, in which tuberculosis is sometimes found, and the lower region, in which tuberculosis is rarely found.

3. Consultation with conscientious clinicians has led to the conclusion that many cases of chronic fibroid tuberculosis give very indefinite, if any, physical signs.

II. Lobar Pneumonia:

1. Lobar pneumonia and bronchopneumonia are easily distinguishable on the roentgenogram.

2. Lobar pneumonia gives the following roentgen signs:

(1). Vascular-lymphatic congestion in the upper lobes.

(2). Enlarged heart.

(3). Localized consolidation.

(4). High diaphragm.

3. Vascular-lymphatic thickening appears early and disappears early, though its occasional persistence may be confused with tuberculosis shadows.

4. Pneumococcemia shows definitely on the roentgenogram when there are symptoms of pneumonia without consolidation, suggesting that the seriousness of the attack depends more on the toxemia than on the extent of pulmonary involvement.

5. The heart is involved before definite signs of consolidation appear.

6. The cardiac enlargement persists for some time after all signs of involvement of the lungs have disappeared.

7. Consolidation may begin at the roots or at the periphery.

8. High diaphragm on the affected side is suggestive, but cannot be considered a constant sign.

III. Bronchopneumonia:

1. Bronchopneumonia is more commonly unilateral than bilateral.

2. The heart is usually not enlarged in bronchopneumonia.

3. Bronchopneumonia is often overlooked on physical examination, as the symptoms may be indefinite and noncharacteristic.

A BACTERIOLOGIC STUDY OF THE PNEUMONIA OCCURRING AT CAMP PIKE, ARK.

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Pneumonia has been one of the important diseases encountered at the base hospital since the opening of Camp Pike. Table 1 represents the results of bacteriologic examinations of the sputums obtained from sixty patients admitted to the hospital during the months of February and March. The sputum was collected from the patients in sterile Petri plates and sent to the laboratory at once and plated on the surface of human blood agar plates without addition of glucose. The table shows the predominant organisms that developed on the plates and most of the other organisms found after forty-eight hours' incubation, along with the clinical types of the disease with which the bacteria were associated.

The importance of the bacteria predominating in these sputums was substantiated in a number of cases by bacteriologic examinations of the blood during life and of the lungs after death.

From the table it will be seen that pneumococcus pneumonias present but little out of the ordinary. It will be seen that two of the Type II cases were complicated by severe jaundice. Since these data were collected, a number of similar cases have been observed, and as in the two above, all were in colored persons, some of whom were known to have syphilis and one multiple gummas of the liver. The pneumococcus cases form 48 per cent. of the sixty cases in this series. Of these, 21 per cent. were Type I, 34 per cent. Type II and 45 per cent. Type IV. I have seen only one Type III case in the hospital.

In 46 per cent. of the cases, streptococci were the predominating organisms; of these, 46 per cent. were nonhemolytic. These organisms formed colonies similar to the hemolytic streptococci, but had no effect on blood, neither hemolysis nor green formation being observed. The organisms were like the hemolytic streptococci as to morphology, but had more tendency to diplococcus formation, and the chains formed were short. Growth in both was flocculent and collected in the bottom of the broth. In the cases coming to necropsy the pneumonia in which this type of organisms was found resembled the ordinary pneumococcus lobar pneumonia. This type of streptococcus was found in the sputum in two cases diagnosed as influenza, and in the pus from a gangrenous appendix, in greatly predominating numbers.

Fifty-four per cent. of the streptococci found were hemolytic. The lesions found at necropsy in these

TABLE 1.—RESULTS OF SPUTUM EXAMINATIONS

Case No.	Predominating Organisms	Other Organisms	Sputum	Clinical Peculiarities	Complications
1	Hemolytic streptococcus	Nonhemolytic	Tenacious; bloody	Typical lobar crisis	
2	IV	Few hemolytic; viridans	Colorless mucus	Typical lobar crisis	
3	Catarrhalis	Nonhemolytic; hemolytic	Colorless mucus	Whole right side	Effusion tuberculosis
4	IV	....	Rusty	Typical crisis	
5	I	....	Rusty	Typical crisis	
6	IV	Catarrhalis; hemolytic	....	Typical	Cervical abscess
7	Hemolytic streptococcus	Catarrhalis	Mucopurulent	Bronchopneumonia	
8	Diphtheroids	Hemolytic; catarrhalis	....	Bronchitis; small area of pneumonia	
9	Leptothrix	Viridans; catarrhalis	....	Postmeasles bronchopneumonia	Empyema
10	IV	....	Purulent	Typical crisis	
11	Hemolytic streptococcus	Catarrhalis	Mucopurulent	Small area of pneumonia; lysis	
12	Hemolytic	Viridans	....	Small area of pneumonia	
13	II	....	Rusty	Lobar; death	Jaundice
14	Nonhemolytic streptococcus	Hemolytic streptococcus	....	Measles; bronchopneumonia	
15	Nonhemolytic streptococcus	Catarrhalis	....	Postmumps bronchopneumonia	
16	I	Catarrhalis	Bloody; tenacious	Lobar; death	
17	Hemolytic streptococcus	Catarrhalis	Mucopurulent	Lobar; lysis	
18	I	Catarrhalis	Mucopurulent; bloody	Lobar; crisis	
19	I	Phar-siccus	Mucopurulent; bloody	Lobar; crisis	
20	Nonhemolytic	Viridans	Bloody	Lobar; crisis	
21	Hemolytic streptococcus	Catarrhalis	Bloody	Lobar; crisis	
22	IV	Catarrhalis	Mucous	Broncho; lysis	
23	II	Catarrhalis	Rusty	Postoperative lobar	
24	IV	Nonhemolytic siccus	Colorless mucus	Lobar; death	Otitis M.: meningitis
25	II	Nonhemolytic streptococcus	Mucopurulent	Lobar; lysis	
26	Nonhemolytic	....	Mucopurulent	Small area of pneumonia following mumps	
27	Hemolytic streptococcus	Staphylococci; catarrhalis	Colorless mucus	Bronchopneumonia	
28	Hemolytic streptococcus	IV; catarrhalis	....	Lobar; delayed resolution	
29	Leptothrix	....	....	Lobar; crisis	
30	II	Staphylococci	Mucopurulent	Lobar complicating tuberculosis; death	
31	Nonhemolytic	Hemolytic streptococcus	Mucopurulent	Lobar	Mumps
32	Hemolytic streptococcus	Catarrhalis; viridans	....	Followed tonsillitis; lobar; lysis	
33	Leptothrix	....	....	Postmumps bronchopneumonia	
34	Nonhemolytic streptococcus	Leptothrix; hemolytic; catarrhalis	Mucopurulent	Bronchopneumonia; death	Empyema
35	IV	....	Mucopurulent	Lobar; crisis	
36	IV	Nonhemolytic streptococcus	Rusty	Lobar; crisis	
37	Nonhemolytic streptococcus	Leptothrix	Bloody mucus	Postmeasles lobar; lysis	
38	IV	....	....	Postmastoid lobar; death	
39	Leptothrix	Hemolytic streptococcus; catarrhalis	....	Lobar; lysis	
40	II	Hemolytic streptococcus; staphylococcus	....	Postotitis	Empyema
41	IV	Nonhemolytic; catarrhalis	Rusty	Postoperative lobar; lysis	
42	IV	....	Mucopurulent	Lobar; crisis	
43	I	IV and hemolytic streptococcus	Rusty	Lobar; crisis	
44	II	Streptococcus; viridans	Rusty	Lobar; crisis	
45	Nonhemolytic streptococcus	Staphylococcus aureus	Mucopurulent	Lobar posttuberculosis; death	
46	Leptothrix	Hemolytic; catarrhalis	Mucopurulent	Lobar; delayed resolution	
47	Nonhemolytic streptococcus	Viridans	Mucopurulent	Lobar; crisis	
48	II	....	Rusty	Lobar; death	
49	Hemolytic streptococcus	Nonhemolytic streptococcus; catarrhalis	Mucopurulent	Posttonsillitis bronchopneumonia	

TABLE 1.—RESULTS OF SPUTUM EXAMINATIONS—*Continued*

Case No.	Predominating Organisms	Other Organisms	Sputum	Clinical Peculiarities	Complications
50	IV	Viridans	....	Lobar; crisis	
51	II	....	*Rusty*	*Postoperative* lobar; lysis	
52	Nonhemolytic streptococcus	....	Rusty	Bronchopneumonia	
53	I	*Staphylococcus aureus*	....	Lobar; crisis	
54	Nonhemolytic streptococcus	Staphylococcus	Mucopur*ulent*	*Lobar*	Empyema
55	Nonhemolytic streptococcus	....	....	Lobar; lysis	
56	Hemolytic streptococcus	Viridans	....	Posttonsillitis bronchopneumonia	
57	Hemolytic streptococcus	....	....	*Lobar* pneumonia; death	Pericarditis
58	II	*Viridans*; hemolytic streptococcus	....	*Postotitis* lobar; crisis	
59	II	Nonhemolytic streptococcus	Mucopurulent	Bronchopneumonia; *lobar* pneumonia	Delay*ed reso*lution
60	Nonhemolytic streptococcus	Diphtheroids	Mucopurulent	Lobar; crisis	

Pneumococcus	48%	Streptococcus	46%
Type I	21%	Hemolytic	54%
Type II	34%	Nonhemolytic	46%
Type IV	45%	Leptothrix	6%

cases were of two kinds: 1. A pneumonia similar to lobar pneumonia due to pneumococci, but with a tendency to pus formation. In many cases this was not more marked than that sometimes observed in the pneumococcus cases in others. Abscesses with areas of necrosis varied in extent, sometimes amounting to gangrene of large portions of the lung. 2. Bronchopneumonia in which the lungs were studded with hard, shotlike nodules, which were extremely hard to the palpating fingers. Cut sections of such lung showed areas up to 1 cm. in diameter which were dark red and completely consolidated. This form was most commonly observed following measles. The areas in some instances coalesced to form areas, in cases amounting to a lobe. In twenty-five of a series of thirty cases of mastoiditis, streptococci indistinguishable from these were isolated. The remaining five were Type IV pneumococcus infections.

TABLE 2.—FERMENTATION CHARACTERISTICS OF HEMOLYTIC AND NONHEMOLYTIC STREPTOCOCCI

Organisms	Effect on					
	Milk	Salicin	Raffinose	Inulin	Mannite	Maltose
1. Nonhemolytic streptococcus from sputum in lobar pneumonia....	—	—	—	—	—	—
2. Nonhemolytic streptococcus from appendix	—	—	—	—	—	—
3. Nonhemolytic streptococcus from lobar pneumonia	—	—	—	—	—	—
4. Nonhemolytic streptococcus from lobar pneumonia	—	—	—	—	—	—
5. Nonhemolytic streptococcus isolated from "influenza".........	—	—	—	—	—	—
6. Hemolytic streptococcus isolated from influenza	Acid	—	—	—	—	Acid
7. Hemolytic streptococcus isolated from lobar pneumonia.........	Acid	—	—	—	—	—
8. Hemolytic streptococcus, bronchopneumonia	Acid	—	—	—	Acid	Acid
9. Hemolytic streptococcus, bronchopneumonia	Acid	Acid	—	—	Acid	Acid
10. Hemolytic streptococcus, bronchopneumonia	—	Acid	—	—	—	—
11. Hemolytic streptococcus, postmeasles bronchopneumonia	Acid	—	—	—	—	Acid
12. Hemolytic streptococcus from mastoid	Acid	—	—	—	Acid	Acid
13. Hemolytic streptococcus from mastoid	Acid and coag.	Acid	—	—	Acid	Acid
14. Hemolytic streptococcus from mastoid	Acid	—	—	—	—	Acid

Both the types of streptococci were more frequently complicated by empyema than were the pneumococcus cases. In the hemolytic cases in two instances there was peritonitis.

The fermentation characteristics of the two types of streptococci are shown in Table 2.

Leptothrix organisms predominated on the plates in 6 per cent. of the cases. These were very minute colonies, barely visible to the naked eye, but extremely numerous. There was no effect on blood. The organisms were gram negative, and varied in length from organisms resembling influenza bacilli to long, slightly wavy organisms extending half way across the field. It was not possible to cultivate these organisms beyond one or two subcultures, and their importance is undetermined.

The series is interesting on account of the high percentage of streptococcus infections, particularly those due to nonhemolytic organisms, which were also found associated with cases diagnosed as influenza and in the pus from appendicitis.

PRIMARY AND DELAYED PRIMARY SUTURE IN THE TREATMENT OF WAR FRACTURES

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The treatment of fractures from battle casualties is for the most part the treatment of wounds of the soft parts, plus the added difficulties which the injuries to bony tissue involve.

To understand, therefore, the treatment of fractures, one must thoroughly appreciate the changes which have been made in the treatment of wounds of the soft parts.

American surgery is most fortunate in arriving on the scene when the principles of war surgery have been established. The biblical truths, as laid down by our French and English colleagues, have been founded on no uncertain grounds and have been enunciated in no uncertain terms.

These principles may be stated in this manner:

1. All battle wounds are to be considered as infected.
2. It is necessary to remove all projectiles, clothing and devitalized tissue as early as possible, at least before the twelfth hour after injury.
3. These wounds can then be considered as aseptic in character and a primary suture made, thus converting compound fractures into simple fractures, and appropriate treatment for these simple fractures thereupon instituted.

What a marvelous and astounding change is this in the application of surgical principles since that fatal day in August, 1914. One cannot but stand in awe and wonder at the results that have been achieved as one compares the past with the present: pus, contrasted with a clean lineal scar; continued pain caused by the packing of gauze and constant irrigation, with the peace of being left alone; the long and often painful processes in the restoration to function, with function restored almost voluntarily and swiftly; weeks and months of treatment, with recovery in a comparatively short time.

I say we are most fortunate as surgeons in coming into the war at such a period; the hard and costly lessons have been learned by the suffering of our allies. We shall be held responsible, and rightly so, if we do not appropriate and practice that which has been laid down for us by the work and at the expense of others.

How have these things come about? By the formation of a trust—a trust composed of the surgeon, the bacteriologist and the roentgenologist, all working harmoniously and constantly together.

Roentgenology.—Every man wounded in battle is roentgenographed immediately on entrance to the hospital, and, generally, while en route to the operating room. A definite description of the fracture is given, and, if a projectile is present, its exact location is made, generally by means of fluoroscopy. These localizations are generally indicated on the surface, by two markings, and the distance and direction from each marking is stated.

Bacteriology.—The bacteriologist determines for us the type of organisms present in the wound. Ninety per cent. of all these wounds are found to be infected by one or more organisms. Here we have both aerobes and anaerobes; the types most commonly found are the stayphylococcus, the streptococcus, the pneumococcus, the colon group and the organisms producing gas gangrene. We have learned from these bacteriologic studies just what course we may pursue in our operative treatment, just what conditions will prevent a successful primary closure, when it will be necessary immediately to open a wound primarily closed, what the indications are for a secondary closure and how soon it may be done (Carrel), etc.

Surgery.—The surgeon in the first place must be a surgeon of the highest character, for he must perform aseptic surgery in a supposedly septic field or at least in a field which has the potentialities of sepsis; his dissections must be clean, his handling of tissues of the minimum, his knowledge of anatomic structures accurate.

I. PRIMARY SUTURES

The primary suture is the method of selection when this can be done. Experience has shown that primary suture may be successfully performed in from 80 to 95 per cent. of the cases. It is obvious that in certain cases primary suture cannot be done, owing to the inability to make a closure, because of the destruction of large amounts of tissue, including skin. But even here the primary suture at times may be accomplished by the aid of a skin flap.

Technic of Primary Suture.—The skin is disinfected with iodin, soap, water and a scrubbing or other methods. The skin edge, together with the tract made by the projectile, is removed. All projectiles and *all* devitalized tissue are removed. Complete hemostasis is performed. The skin edge is accurately approximated without tension.

Results of Primary Suture.—As has been said, primary suture may be done in from 80 to 95 per cent. of all battle casualties, if operation is performed within a proper time. This is generally regarded as within the first twelve hours; but in face cases, the time limit for successful primary suture is slightly increased. According to Lemetre, from July, 1915, to February, 1918, he had performed 2,664 primary sutures with complete success in 2,549 cases, or 95 per cent., partial failure in eighty-three cases, or 3.1 per cent., and complete failure in thirty-two cases, or 1.2 per cent.

The ordinary surgeon would consider these partial failures to be complete cures, for they were stitch abscesses which granulated in a few days and did not affect the deep structures or interfere with the integrity of the wound.

Duval says that in periods of calm at the front, when the patients are received in proper time, 90 per cent. of the wounds can be closed by primary suture; but in times of stress only 30 per cent. may be sutured primarily, delayed primary suture being its substitute.

In cases in which primary suture is done, 95 per cent. are successful. According to Gross, of 759 wounds treated by primary suture, 88.8 per cent. were successful. Thus I might go on giving the results of others' work. So we see that in the hands of good surgeons at the front, when the wounds are received within from eight to twelve hours after the casualty, roughly speaking, from 80 to 95 per cent. of all such wounds, of whatever nature, soft parts or bone, can be treated successfully by primary suture, and, of these primary sutures, from 90 to 95 per cent. are successful.

Advantages of Primary Suture over Other Methods of Wound Treatment.—1. The mortality is greatly decreased, primarily because there is escape from the grave danger of secondary infection, so frequent when the wound is left open. In witness of this fact, the statistics of the hospitals of the interior in France in open wounds show a streptococcus infection of 80 per cent., whereas in fresh wounds from battle casualties there is only a 10 per cent. infection of this nature.

2. The patients suffer less, as they escape the necessity of all secondary and continuous dressings.

3. By primary suture the restoration of function is obtained more quickly and more completely, as there is no amount of scar tissue, or dense adhesions of muscles, tendons and joints, as is so frequently the case when wounds heal by granulation.

4. The period of hospitalization is therefore wonderfully decreased, which is of primary importance from a military point of view.

5. The amount of dressings necessary for the treatment of the wounds is likewise decreased in a marvelous degree, the importance of which cannot be overestimated in a war whose base of supplies is so many miles away.

6. In like proportion, compound, infected fractures are changed into aseptic, simple fractures, and may be treated as such,

It has been said that 10 per cent. of battle wounds, even when the wounded men have arrived at the hospital within the first twelve hours, cannot be primarily closed, mainly in these instances: cases in which the shock is so great that the patients cannot stand the operation within the first twelve hours; deep wounds in which the complete excision of all devitalized tissue is uncertain or impossible; wounds in which no roentgen apparatus being present, the projectile cannot be extracted, and wounds in which the loss of substance is so great that complete closure is impossible. It has been shown that from 5 to 10 per cent. of the primary sutures are not successful, and this is due mainly to the streptococcus.

In an evacuation hospital, all wounds that are seen within the proper time after injury, which are applicable to primary suture, are closed by this method. At the same time, cultures of the wounds are taken. The wounds that must be opened immediately on the bacteriologic report are those primarly infected with the virulent types of streptococci. A bacteriologic report of other organisms does not in the main disturb us.

We know that the mechanical sterilization by the operative procedure of primary suture, together with the action of the human tissue, take care of all other organisms, particularly when in pure culture. The virulent streptococci generally by themselves, and always when associated with other organisms, such as the streptococcus, enterococcus, the gas gangrene group, etc., demand immediate opening of the primary suture.

TABLE 1.—PRIMARY SUTURES OF BONE FRACTURES (LEMETRE)

	Total Cures	Failures	Partial Cures
1. Joints:			
Tibial torsal	15	..	..
Knee	22	1	..
Wrist	20	..	2
Elbow	22	..	3
Shoulder	12	..	1
2. *Bones:*			
Femur	24	..	2
Leg	64	2	5
Humerus	47	1	3
Form	26	..	2
Clavicle	3	..	..
Ulna	24	..	3
Tibia	2	..	..
Radius	29	..	2
Fibula	46	..	..
Hand	67	2	4
Foot	5	..	5
Skull	26	..	1
Skull and brain	15	1	3
Chest	7	..	..

II. DELAYED PRIMARY SUTURES

The delayed primary suture is the method of wound closure that has been adopted in all those cases in which primary suture would have been done, except for circumstances, generally of military character, that made it inadvisable. The technic of delayed primary suture is exactly that of primary suture, except that the skin is not closed, and a dry sterile dressing is placed over the wound. The skin edge is brought together from three to eleven days later.

A hospital at the front can generally in times of stress keep only 20 per cent. of its beds permanently filled. All patients with primary sutures should be kept at the place of operation for at least ten days, so that the wound may be watched and not subjected to the traumatism in transportation. Therefore, when patients must be removed immediately, within six or seven hours after operation, delayed primary suture takes the place of primary suture.

This method of procedure has been found eminently successful. Patients with delayed primary sutures are sent to the rear within six or seven hours after the initial operation, and the wounds are closed preferably on the second, third or fourth day. The percentage of cures in delayed primary sutures is between 80 and 87. This method allows the beds at the front to be continuously utilized, and adds to the rapidity of recovery over the former methods, according to the statistics of Duval. By delayed primary suture, 32 per cent. of the patients were returned to duty in three weeks, 30 per cent in one month, and 28 per cent. in two or more months.

III. FRACTURES

My particular object is to emphasize the necessity for the early treatment of bone injuries, by primary or delayed primary suture, for this is the keynote to the successful handling of war fractures. To change an infected compound fracture into an aseptic, simple fracture at the outset, is to do away with the greatest difficulties that are found in the treatment of war fractures. It is not my intention to take up the mechanical principle on which fractures, generally compound, of the various bones of the body are to be treated. That is well set forth in the Splint Manual, authorized by the American Expeditionary Forces; but I wish to insist that, by the use of the principles of primary and delayed primary suture, the entire subject of the treatment of fractures has been changed; that one is no longer treating compound fractures with all the difficulties thereunto appertaining, but has the much simpler task of the treatment of a simple fracture.

The reader may interpose to say that the statistics I have given are those appertaining only to soft part wounds, and the infection of bones is another and far more difficult proposition. That is not the case; the figures given are taken from the injuries to bones as well as of the soft parts. Indeed, the infection of bones is generally secondary to the infection of soft parts. Therefore it follows that, if by primary or delayed primary suture this infection can be stopped or removed, the bone will not become infected.

In the statistics given by Lemetre (Table 1), in a series of 421 compound fractures of all bones, among which there are fifty-one compound fractures of the humerus and twenty-six of the femur, the most difficult of all war wounds to treat and the ones which formerly gave the highest mortality, there is a complete cure with a simple fracture of 91 per cent.; and, if we add the partial failures which do not affect the treatment of the fractures, we have 97 per cent. of cures, better than that for soft part wounds.

Again, according to Gross (Table 2), there were 213 infected compound fractures treated by primary suture. These were changed into aseptic simple fractures in 89 per cent. of the cases; and so I might quote other authorities whose statistics bear out these wonderful results.

TABLE 2.—PRIMARY SUTURES OF BONE FRACTURES (GROSS)

	Total	Incomplete	Oblique	Comminuted
Skull	27	..	..	..
Inferior maxillary	9	5	..	4
Clavicle	4	1	..	3
Scapula	16	12	..	4
Clavicle and scapula	3	..	..	3
Ribs	9	..	1	8
Sternum	2	2	..	..
Vertebrae	6	6	..	..
Shoulder	7	1	..	6
Humerus	11	5	1	5
Elbow	8	3	..	5
Forearm: Both bones	..	..	..	4
Forearm: Radius	11	..	..	3
Forearm: Ulna	..	..	..	4
Carpus	4	..	..	4
Metacarpus	8	..	..	8
Ilium	11	11	..	..
Sacrum and coccyx	4	4	..	..
Femur	10	6	3	1
Knee	16	14	..	2
Patella	5	..	..	5
Leg: Both bones	2	..	..	3
Leg: Tibia	19	13	2	4
Leg: Fibula	6	..	1	5
Tarsus, Metatarsus	14	..	..	..

The rules of the game have, therefore, been laid out for use by the application of this scientific knowledge, by combination of the surgeon, the roentgenologist and the bacteriologist. As Médecin-Principal Duguet has said, "Thus the old formula which subordinates the surgical act to the preestablished sanitary formation finds itself reversed." Today, it is the sanitary organization in its entirety that conforms and adapts itself to the exigencies of modern surgical technic. All compound fractures must be operated on by the technic of primary or delayed primary suture, within eight or ten hours of the casualty. Thus the problem is one of the treatment of the simple fracture.

The transportation of the wounded must be accomplished with this end in view. Hospitals of sufficient size must be located in the zone of the advance near enough to make this transportation possible.

Each hospital must be adequately staffed with surgeons of sufficient skill, with a bacteriologist and roentgenologist, in constant consultation for the proper carrying out of this technic.

INFLUENZAL SINUS DISEASE AND ITS RELATION TO EPIDEMIC INFLUENZA *

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A typical attack of influenza usually begins as a rhinitis and spreads from the nasal mucosa throughout the respiratory tract. As the chief symptoms are produced by the involvement of the bronchial tree, attention is naturally directed to the lungs and bronchi as the most important foci for the infection. However, in studying acute cases one is often impressed by the fact that the severity of the disease, best evidenced by the general prostration of the patient, is out of all proportion to the physical signs. Tracheobronchitis with abundant mucopurulent sputum, a particularly distressing and often spasmodic cough, and moist râles uniformly present in both lungs, almost exhaust the positive findings for the respiratory tract. It becomes difficult to understand why a vigorous, previously healthy young adult, should succumb to an infection which in many cases appears to be almost wholly confined to the tracheobronchial mucosae. It might even be questioned whether such an individual should die from a *primary* bronchitis and bronchopneumonia. In the opinion of many clinicians and pathologists, such a combination is rather rare.

Because of these considerations and because of a series of observations made on soldiers of the American Expeditionary Forces, it has seemed desirable to suggest that in addition to the infection of the respiratory tract per se, other lesions, almost uniformly neglected by writers on the subject and rarely noted by clinicians or pathologists, may prove to be very seriously important factors both in the clinical picture and in the often fatal outcome of the disease.

My attention was first directed to the serious nature of so-called "influenzal purulent bronchitis," by a visit in October, 1917, to the base hospital zone of the British Expeditionary Forces in France, at which time Captain Rolland of the Royal Army Medical Corps mentioned his observations in a series of cases of this disease, which had occurred in epidemic proportions and which was highly fatal. The influenza bacillus seemed without doubt to be the causal agent, though pneumococci and streptococci were often also isolated.

On the advent of cold, wet weather in the American Army zone, severe attacks of bronchitis assumed almost the nature of an epidemic and showed a rather high percentage of fatal cases. On examination of these cases postmortem, one was at once struck by the pathologic syndrome presented, which strongly suggested infection by *B. influenzae*. This suspicion was subsequently confirmed by bacteriologic examination.[1]

It is not my purpose at this time to discuss either the general pathologic or bacteriologic characters of this series of cases. It is the involvement of the sinuses at the base of the skull that deserves especial consideration, and because of the importance of this complication, as well as its apparent frequency and the relatively small amount of attention devoted to the subject in medical literature, this separate communication is considered justifiable.

Infection of the accessory sinuses of the nose and skull have often been noted. As early as 1837, Petrequin[2] stated that frontal sinus involvement produced the headache so often present in the disease. Brochin,[3] in 1884, distinguished the "cephalic" form of influenza by localizations in the nasal fossae, and the frontal and maxillary sinuses. Pfeiffer,[4] however, in his classic descriptions of the etiology and pathology of influenza, does not mention the sinuses. In the same year (1892), Weichselbaum[5] published the necropsy findings of a series of cases, in six of which he found inflammatory lesions in either the ethmoids or the antrum. In two of these cases the influenza bacillus was recovered from the exudate. Bull[6] has also described sinus involvement as a part of the sequelae of influenza. Wassermann,[7] in a fairly complete study of clinical cases and necropsy material, while confirming Pfeiffer's results, evidently did not encounter or missed the significance of any sinus complications. In a review of the entire subject of influenza, Schrötter[8] also fails to note the relation of the sinuses to pulmonary types of the disease.

In the more recent literature there are occasional references to sinus influenza, notably by Kyle[9] and Coates;[10] but Hübschmann,[11] in a study of 110 cases, and Hammond, Rolland and Shore,[12] in an article based on seventy-one necropsies on patients showing purulent bronchitis, do not discuss at all the question of the sinuses. In short, sinus disease in epidemics of influenza is either totally disregarded or described as an accidental complication or sequela of the infection of the pulmonary tract.

When, therefore, our first fatal case of influenzal tracheobronchitis and bronchopneumonia showed, at postmortem examination, an empyema of both sphenoid cavities, and the pus from these revealed by both smears and cultures typical influenza bacilli, the condition was regarded as an interesting but unusual complication. However, as case after case coming to necropsy showed similar or comparable lesions, the circumstances warranted more careful and detailed study.

The conditions found may best be summarized from the abridged notes of the necropsy examinations.

Case 1.—J. D., aged 22. Duration of illness, sixteen days. Lungs: Typical purulent tracheobronchitis and bronchopneumonia.

Sinuses: Sphenoidal sinus completely filled with a thick mucopurulent exudate under some pressure. Mucosae markedly swollen and deeply congested. Posterior ethmoids contained small amount of thin, yellowish fluid. Anterior ethmoids and frontals free.

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* From the Central Medical Department Laboratory, A. E. F.

[1] For the larger part of the bacteriologic results in these cases, I am indebted to the careful, thorough work of Lieut. J. G. Hopkins, M. R. C. His painstaking labors, carried out under the most trying conditions, deserve more than passing mention.

[2] Petrequin: Gaz. méd. de Paris, cited by Brochin (Note 2).

[3] Brochin: La grippe, Dictionnaire encyclopédique des sciences médicales, 1884.

[4] Pfeiffer: Vorlaufige Mitteilungen über den Erreger der Influenza, Deutsch. med. Wchnschr., 1892, No. 2, p. 28; Die Aetiologie der Influenza, Ztschr. f. Hyg. u. Infectionskr., 1892, **13**.

[5] Weichselbaum: Beitrag zur Aetiologie und pathologische Anatomie der Influenza, Wien. klin. Wchnschr., 1892, p. 459.

[6] Bull: Multiple Sinus Disease Following Influenza, Med. Rec., New York, 1899, **56**, 336.

[7] Wassermann: Einige Beiträge zur Pathologie der Influenza, Deutsch. med. Wchnschr., 1900, No. 28.

[8] Schrötter: In Kolle and Wassermann's Hand Book.

[9] Kyle: Epidemic Nasal Sinus Disease, Jour. Laryngol., Rhinol. and Otol., 1917, **30**, 366.

[10] Coates: Etiology and Diagnosis of Diseases of the Accessory Sinuses Following Influenza.

[11] Hübschmann: Ueber Influenza, München. med. Wchnschr., 1915, **62**, 1073.

[12] Hammond, Rolland and Shore: Purulent Bronchitis, Lancet, London, 1917, **2**, 41.

Bacteria: Influenza bacilli recovered from sphenoidal sinus, lung and liver. Occasional gram-positive cocci in pairs and short chains also present.

Case 2.—C. M., aged 23. Duration of illness, 23 days.

Lungs: Typical purulent tracheobronchitis and bronchopneumonia.

Sinuses: Left sphenoid filled by thick mucopurulent exudate under pressure. Both posterior ethmoids contained moderate amounts of pus. Mucosae swollen and reddened. Other sinuses free.

Bacteria: Cultures revealed *B. influenzae* in ethmoid, lung, bronchi and liver. Streptococcus also found in bronchus but not in ethmoid.

Case 3.—M. C., aged 27. Duration of illness, twenty-six days.

Lungs: Purulent tracheobronchitis and bronchopneumonia. Mucosae swollen.

Sinuses: Both sphenoids and posterior ethmoids full of thick, mucopurulent exudate. Mucosae swollen. Anterior ethmoids and frontals apparently clear.

Bacteria: *B. influenzae* recovered in pure culture from the sphenoidal pus and the lung, and in mixed culture from bronchi, spleen, liver and bronchial lymph nodes.

Case 4.—L. S., aged 23. Duration of illness, thirty-two days.

Lungs: Purulent tracheobronchitis and bronchopneumonia with fibrinopurulent pleuritis.

Sinuses: Sphenoidal, posterior ethmoidal and frontal sinuses filled with thick mucopurulent exudate. Mucosae swollen and reddened. Anterior ethmoids free but mucosae swollen.

Bacteria: Influenza bacilli from frontal, sphenoid, bronchus, lung and liver Pneumococci also in sphenoid and lung. From bronchus, practically pure culture.

Case 5.—M. H., aged 24. Duration of illness, twenty-nine days.

Lungs: Purulent tracheobronchitis, bronchopneumonia and fibrinopurulent pleuritis.

Sinuses: Mucosae of sphenoidal, ethmoidal and frontal sinuses swollen and reddened. In left sphenoid and both frontals were a few drops of mucopurulent exudate. Other surfaces were bathed by a mucoid fluid.

Bacteria: *B. influenzae* recovered from sphenoid, ethmoid, lung, bronchus and liver. Streptococci also found in sinuses.

Case 6.—A. C., aged 22. Duration of illness, twenty-nine days.

Lungs: Purulent tracheobronchitis, bronchopneumonia and fibrinopurulent pleuritis.

Sinuses: Sphenoids contained a few drops of thin mucopurulent exudate. Other sinuses free. Middle ears and mastoids on both sides showed thick pus.

Bacteria: Influenza bacilli obtained from sphenoid, middle ear, lungs and bronchi.

Case 7.—W. H., aged 22. Duration of illness, twenty-three days.

Lungs: Purulent tracheobronchitis with bronchopneumonia and fibrinous pleuritis.

Sinuses: Sphenoids, posterior ethmoids and right frontal contained abundant mucopurulent exudate, and mucosae were markedly swollen and congested. Middle ears on both sides showed similar condition.

Bacteria: *B. influenzae* found in sphenoid (associated with streptococci and pneumococci), bronchus, pleura and middle ears.

These cases have certain features in common which distinguish them on the clinical and the pathologic side. A purulent tracheobronchitis with patches of bronchopneumonia definitely identifies them as belonging to the "pulmonary type" of influenzal lesion. However, [illegible] instance either one or several or all the sinus[illegible] that ar[illegible]lved in what was usually a relatively s[illegible] t is no[illegible]atory process. It should be further [illegible] nciple [illegible] cases all occurred in young men, the [illegible] e vari[illegible]m 22 to 27 and averaging 23. As is usual with influenza, the duration was comparatively long, averaging over three weeks (twenty-four days), and ranging from sixteen to thirty-two days.

In view of the foregoing facts, especially the long duration, the question now arises as to whether, after all, these sinus infections are not merely sequelae or unimportant complications of the principal lesion, which, it may be contended with much reason, is located in the pulmonary system. In the course of our necropsy experiences, considerable evidence accumulated having some bearing on this point.

The following cases illustrate the presence of the syndrome described above, but with the added difference that death was in all probability due to other and seemingly independent conditions:

Case 8.—R. B., aged 18. Duration of illness, eighteen days. Death due to acute general miliary tuberculosis particularly involving lungs, spleen liver and brain, and arising from an older tuberculous lesion in a seminal vesicle.

Lungs: Acute purulent tracheobronchitis.

Sinuses: Sphenoids, especially the left, filled with thick, yellowish exudate, and lined by swollen reddened mucosae. Mucosae of ethmoids and frontals thickened and moist, but free from pus.

Bacteria: Influenza bacilli from sphenoids and bronchi.

Case 9.—J. M., aged 24. Duration of illness, three days. Death due to epidemic cerebrospinal meningitis.

Lungs: Purulent tracheobronchitis, with bronchopneumonia and seropurulent pleuritis.

Sinuses: Mucosa of sphenoid swollen, but all sinuses free from demonstrable pus.

Bacteria: *B. influenzae* obtained in culture from sphenoid, lung and bronchus.

Case 10.—G. T., aged 27. Duration of illness, thirty-nine days. Death due to scarlet fever. Complicating measles with terminal seropurulent peritonitis and pericarditis.

Lungs: Acute tracheobronchitis (not purulent), with acute serofibrinopurulent pleuritis.

Sinuses: Sphenoids, ethmoids and frontals contained considerable mucopurulent exudate, and mucosae were swollen. Middle ears both showed thick pus.

Bacteria: From the sinuses and middle ears, *B. influenzae* was obtained in cultures and smears. All the other lesions yielded hemolytic streptococci.

Case 11.—F. P., aged 19. Duration of illness, fifty-three days. Death due to double empyema (pneumococcic).

Lungs: Mucopurulent tracheobronchitis.

Sinuses: Sphenoids filled with a mucopurulent exudate. Mucosae swollen but pale. Ethmoids and frontals contained a small amount of mucoid fluid.

Bacteria: Influenza bacilli obtained in mixed culture from sphenoid. No culture taken of the bronchus.

Case 12.—F. B., aged 22. Duration of illness, eleven days. Death due to empyema and pericarditis complicated by pulmonary abscesses (all streptococcic).

Lungs: Purulent tracheobronchitis (pneumococcus, Type III).

Sinuses: Sphenoids showed swollen gelatinous mucosae, and contained a thin mucopurulent fluid. Remaining sinuses appeared normal.

Bacteria: Influenza bacilli obtained by culture from sphenoid.

Case 13.—H. P., aged 18. Duration of illness, thirty-five days. Death due to double empyema (pneumococcic).

Lungs: Acute purulent bronchitis (no culture made).

Sinuses: Sphenoid sinus filled (under pressure) with thick mucopurulent exudate. Mucosae swollen but pale. Remaining sinuses free.

Bacteria: From sphenoid, *B. influenzae* obtained by culture and smears.

As has been indicated, in these six cases, death was in all probability due to some other than an influenzal infection. What the interrelation was between the various infecting organisms furnishes an interesting speculation. That which concerns us at this time is the presence in all these cases of pathologic conditions in the sinuses in which the exudate harbored influenza bacilli that it is fair to presume were pathogenic. It must also be admitted that in some of the cases influenza organisms were possibly responsible for the conditions found in the bronchi and trachea; but certainly in these regions the pathologic processes were no further advanced than in the sinuses. It would not appear, at least, that the sinuses were necessarily secondarily or terminally invaded as compared with infection of the bronchial tree.

Further evidence is produced by two other cases in which sudden death was due to accidental causes:

Case 14.—A. S., aged 22. Duration of life after accident, 40 minutes. Death due to bullet wound through chest, involving heart and lungs.

Lungs: Bronchi apparently normal.

Sinuses: Mucosae of sphenoids swollen; cavities contained mucoserous exudate.

Bacteria: *B. influenzae* isolated from sphenoid in pure culture.

Case 15.—J. H., aged 30. Duration of life after accident, sixteen hours. Death due to fracture of skull and hemorrhage of brain.

Lungs: Bronchi apparently normal.

Sinuses: Left posterior ethmoid showed a few drops of thick mucopurulent exudate. Mucosae swollen and reddened. Other sinuses apparently free.

Bacteria: *B. influenzae* isolated in pure culture from this pus.

In both of these cases, with no macroscopic evidence of bronchial or tracheal involvement, definite inflammatory conditions associated with pure cultures of the influenza bacillus were found in the sinuses. Here, at least, the infection would appear to have been present in the sinuses before it became of any importance in the pulmonary tract. It might then have been a potential nidus for the future development of lung complications. Even granting that the sinus conditions were sequelae of a previous bronchitis from which the patients had recovered, the menace for recurrences and extensions would probably remain the same. After all, the question of whether the lungs or the sinuses were first affected is relatively immaterial compared to the importance of the facts themselves, namely, that the sinuses may be seriously involved in cases of influenzal bronchitis, and also that this infection of the sinuses may exist independently of any lung disease either as a consequence or a cause.

COMMENT

It would, of course, be unreasonable to assert that all cases of influenza are accompanied by sinus complications. While it is true that in only one of our cases of influenzal purulent tracheobronchitis coming to postmortem did we fail to find sinus disease also present, it is unfortunate that both in this case as well as in the others of the series the antrum of Highmore was not also investigated. However, the number of cases is altogether too small to justify any sweeping conclusions. They do serve most emphatically to emphasize the importance of the sinuses in the respiratory type of influenza.

This importance is interesting from two standpoints. First, from the standpoint of a local focus of infection, which not only constantly menaces the pulmonary system, only awaiting suitable conditions of exposure and lowered resistance for hostile invasion, but also furnishes continued sources of toxic absorption, not to mention the direct effect on the well being of the patient from the presence of these local conditions. Second, and more important, is the bearing that these local infections have on prophylaxis and treatment. When their attention had been called to the possible constant presence of sinus disease in patients suffering from influenzal bronchitis, the attending physicians adopted local measures of treatment for these conditions, even when their presence could not be diagnosed with any degree of certainty. Local applications to the nasal passages of cocain and epinephrin solutions often resulted in copious discharges of thick, mucopurulent exudate from the sinuses, with marked relief to the patient, such as amelioration of headache and pain in the eyes, as well as definite betterment of the conditions in the bronchi and trachea.

While the general proposition that young, otherwise healthy adults do not die from uncomplicated primary bronchitis or bronchopneumonia is by no means without exceptions, nevertheless, it is always extremely desirable in such cases to search most carefully for foci of infection other than the respiratory tract per se. The middle ears, serous membranes and even the blood stream may harbor the offending organisms, but in cases of influenza and possibly other respiratory diseases,[13] the sinuses of the skull should always be investigated and their freedom from involvement assured before other than general therapeutic measures of relief are abandoned.

Inevitably in these days, the question of carriers is linked up with that of actual cases, and perhaps too little consideration has been given to sinus disease as furnishing chronic foci for the spread of epidemics.

The entire subject deserves further investigation, and whether or not my conclusions are found to be justified, in the study of larger groups of cases and by other workers, is a matter of minor importance. If more careful attention is directed toward what at times is an important feature of epidemic influenza, namely, sinus involvement, this communication will have fully accomplished its purpose.

SUMMARY

1. Epidemics of respiratory influenza [illegible] tracheobronchitis) have been fairly severe [illegible] American and the British Expeditionary [illegible]

2. In the investigation of cases, both [illegible] at postmortem, little attention in the [illegible] given to the question of accompanying [illegible]

3. Of eight fatal cases of purulent [illegible] due to the influenza bacillus, all [illegible] involvement of one or more of the [illegible] of the skull by inflammatory processes, [illegible] cases, directly due to the invasion [illegible] the influenza bacillus.

4. In six patients that died from [illegible] ently independent infection, the [illegible] enzal inflammations.

5. Of two patients dying from [illegible] injuries, both harbored in their [illegible] pure cultures of *B. inflenzae*.

6. Appropriate treatment of [illegible] suffering from influenza [illegible] symptoms and apparently to [illegible]

7. Investigation of the [illegible] influenza is strongly recom[illegible] on therapeutic but also on [illegible]

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[13] As, for example, whooping [illegible] influenza both in the character [illegible] many of the clinical features [illegible] some influenza patients is often [illegible] caused by the Bordet-Gengou [illegible]

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SATURDAY, MAY 25, 1918

THE TREATMENT OF AMEBIASIS

The recognition of the *Endameba histolytica* as the cause of that form of dysentery known as amebic dysentery, a disease endemic in many parts of the world and liable to occur in widespread, fatal epidemics, has been helpful in many ways. The identification of the parasite and its differentiation from other organisms at times inhabiting the alimentary tract of man has made the early accurate diagnosis of the infection more easy. It has also facilitated the problems of prophylaxis and therapy by furnishing dependable information respecting the specific form of life that must be combated. .

The most familiar specific therapy of amebic dysentery in recent years involves the use of ipecac and emetin. Thus, according to the Handbook of Therapy:[1]

> Whether the amebae are on the surface of the mucous membrane, deeply embedded in the ulcers, or localized elsewhere in the body, they may be reached by properly administering ipecac and emetin. The amebae on the surface of the mucous membrane are not likely to be affected by emetin administered hypodermically. On the other hand, emetin given hypodermically becomes more quickly active on the deep seated organisms and the localized lesions. . . . Happy though the results of this combination may be in treating amebiasis, the fact should not be overlooked that emetin is an amebacide and has little to do with the healing of ulcerations. Every case of amebiasis should, after this treatment, be considered one of ulcerative colitis and so treated from a dietetic point of view. At the same time every effort should be made to enhance resistance by change of climate, tonics, etc., to obviate the distressing sequelae characteristic of the disease.

Dale and Dobell[2] of the Medical Research Committee in London have lately made a somewhat rigorous test of the action of substances that already have gained or are likely to gain a therapeutic reputation in amebic dysentery. These studies have brought evidence of an unmistakable discrepancy between the action of emetin, in particular, and likewise other substances in vitro and their curative effects in dysentery. The earlier assumption on which the use of ipecac alkaloids was based attributed their favorable effect to a direct amebacidal action. Dale and Dobell found that emetin and the other alkaloids of ipecacuanha, as well as artificial derivatives, exhibited no characteristically high toxicity for the amebas, when compared with that of some other alkaloids. Methylpsychotrin, a natural alkaloid from ipecacuanha, which is more toxic for *Endameba histolytica* when tested in vitro, and much less toxic for mammals than emetin, appears to be entirely devoid of therapeutic action even when it is given in large doses.

There is clearly some other factor, Dale and Dobell conclude, in the cure of dysentery by emetin, than the alkaloid and the amebas; and that factor must be supplied by the host. The participation of the host in the process is believed to be further evidenced by their observation that emetin has no appreciable effect on the course of amebic dysentery in the cat, while it cures the disease in man, even when the same strain of amebas is present in the two hosts. It should be remembered that the *Endameba histolytica* is an obligate parasite which, unlike some other amebas that survive in the contents of the bowel, can live and multiply only by invading the tissues of its host. Perhaps, therefore, the effective drugs act by promoting some natural defensive reaction to invasion. In any event the theory of the mode of action of emetin in amebic dysentery needs reconsideration; and on its correct formulation rests in no small measure the possibility of selecting other suitable amebacides.

THE HOUSEFLY IN SPRING

Why flies are both a nuisance and a menace to health scarcely needs any longer to be explained. The smallest schoolboy has been taught to look on these little insects as enemies that must be conquered. Something more than flytraps and flypaper and screens are requisite for a successful campaign. We may continue to "swat the fly" with unabated vigor for years to come; but until the life habits and reproductive phenomena of this species are clearly understood so that scientifically founded plans for the conquest of the objectionable creatures can be put into operation, progress will scarcely be demonstrable. Sanitary and medical projects have need of the entomologist in this as in various other modern problems that bear on animal welfare or human health and comfort.

Of flies it is well known that they are attracted by most forms of food and putrid substances, and that they breed where food and mediums for the deposition of eggs are available. This is particularly the case in manure. It is also realized that the temperature plays an important part in the activities of the insects. They disappear from view in cold weather. Do they persist during the winter season? Can they winter over in protected or slightly heated locations, or is the appearance of the housefly in the spring connected with other factors? A government entomologist[1] has supplied the answer to some of these queries, not by haphazard methods but by careful observations extended over several years in the vicinity of Washington. There is no evidence whatever to show that houseflies do or can persist as adults from November to April, either outdoors, in protected stables, or in attics or heated buildings. Temperatures of from 12 to 15 F. are quickly fatal, and there is every reason to believe that any temperature below freezing is fatal if continued long enough. In heated buildings their life is not prolonged beyond that of summer at like temperature, nor is there any suspension or retardation of sexual development or activity.

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[1] Handbook of Therapy, Ed. 4, Chicago, American Medical Association, 1915, p. 265.

[2] Dale, H. H., and Dobell, C.: Experiments on the Therapeutics of Amoebic Dysentery, Jour. Pharmacol. and Exper. Therap., 1917, **10**, 399.

If adult houseflies appear, as they sometimes do most unexpectedly in isolated instances in midwinter, it is because they represent the result of continued breeding in warm places where food and mediums for deposition exist. Many of the late forms will find their way on mild days to heated buildings. Those that do not are quickly killed. The more successful flies, Hutchison[1] reminds us, are attracted, as in summer, to odors of food, and will congregate in kitchens, dining rooms, restaurants, bakeries, animal houses, and the like. If no food is at hand they will quickly perish. When food is available, they may continue alive through December and January and even into February, if not destroyed by fungus attacks. But there are neither experiments nor observations to show that they can continue throughout the winter until temperatures are again favorable for outdoor activity and egg laying. If flies find access in the autumn to heated buildings, where both food and mediums for deposition are available, such as animal houses or restaurants in which sufficient attention is not given to the disposal of garbage or kitchen wastes, they will continue breeding throughout the winter. In such cases the flies present in March and April are the offspring, not the survivors, of those that found their way to such places the preceding autumn. Thus, Hutchison adds, it is probable that this method of overwintering is much more widespread than is now realized, especially in cities, where there must be several foci from which flies escaping on warm days in March and April survive to produce the hordes that begin to appear late in May.

In the case of the larva and pupa stages, it must be admitted that the fly can overwinter where conditions are not too rigorous. The government entomologists are uncertain as to whether overwintering in these stages or by continued breeding is the more common or more successful. The chances are that few, at most, of the larvae present in manure in the autumn can survive until the following spring. These observations show clearly that the winter months in the colder climates afford a chance to make a good beginning in the control of the fly nuisance in the following summer. It is our neglect of filth in which flies can breed that undoes the good which the fly-killing cold weather has bestowed without cost.

THE POMELO, OR GRAPEFRUIT

Grapefruit is a popular name for the edible fruit of *Citrus decumana*, now widely used in the dietary of American households. Although the designation pomelo has been adopted in scientific circles in this country, and the fruit is termed "pomelow" by the English of Ceylon and India, the now familiar expression grapefruit, selected in recognition of the fact that the fruit commonly occurs on the trees in large clusters somewhat resembling those of grapes, is likely to be retained. The name "shaddock," which was likewise employed by some a few decades ago, is all but abandoned now.

Although even younger persons can recall when grapefruit was comparatively rare as a component of our regimen, it is not easy to realize that the first shipments from Florida were made subsequent to 1880. As late as 1885 the fruit was described as "more showy than useful," while it was incidentally noted that the juice is rather refreshing.[1] Despite the fact that literally thousands of carloads of grapefruit are annually shipped to market now in this country, only the scantiest information about a fruit found on so many American tables is actually available in easily accessible literature. It is helpful, therefore, to find that the United States Department of Agriculture has begun to fill the gap in our knowledge with some dependable information regarding the composition of the grapefruit.[2]

The edible portion — the pulp or juice — deserves first attention from the dietetic standpoint. It contains sucrose and reducing sugars in about equal proportions, the total reaching 30 gm., or approximately 1 ounce, in a large specimen of some varieties in which this part may weigh three quarters of a pound or more. Thus a diabetic indulging in half a grapefruit may readily ingest from a quarter to half an ounce of sugar in a product in which this may be unsuspected, owing to the sour taste. The latter is due, as in the case of other citrus fruits, to citric acid, the content varying from about 2 to 6 gm. per fruit, depending on the size, variety and stage of ripeness or storage. Whereas the sugars increase during storage, the acidity decreases.

The peel or rind of the grapefruit offers not a little of interest to the chemist. The essential oils are represented by limonene, citral, pinene and alcohols. Beside the pectin there is, further, a glucosid naringin which is synonymous with the "bitter principle" of the fruit. Whether this compound, in particular, and other components have any pharmacologic potencies remains to be ascertained. Nevertheless, therapeutic efficacy has been ascribed to the pomelo by more than one writer. Evidently the bitterness has suggested the potency of quinin or a similar alkaloid; hence the assurance that "a cool, juicy pomelo before breakfast is one of the pleasantest and surest antidotes imaginable for malaria." It is stated that subtropical or tropical countries are prone to offer grapefruit or similar citrus fruits as a safeguard against malaria, and publications from these sources contain similar advice.

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[1] Hutchison, R. H.: Overwintering of the House Fly, Jour. Agricultural Research, 1918, **13**, 149.

[1] Downing: Fruits and Fruit Trees in America, 1885, p. 579.

[2] Zoller, [illegible] Some Constituents of the American G[illegible] (Citrus D[illegible] [illegible]ur. Indust. and Engin. Chem., 1918, **10**.

We may well enjoy the luscious grapefruit, content with its small modicum of nutriment and large share of pleasures of the palate. The juice fruits are not selected primarily for their supply of calories. They have other compensating virtues which put them in the class of acceptable dietary accessories. One need merely recall the antiscorbutic properties of the orange — and possibly of citrus fruits in general. The government expert has sounded the proper note of warning in these words:[2]

> The dailies and periodicals of promoters in citrus fruit sections abound in attractive quackery on the beneficent medicinal properties of all citrus fruits, and especially grapefruit. This remedial property is being assigned to everything present in the fruits—the "alkaloids" said to be present, the citric acid, the potassium phosphate in the pulp, and the oils in the peel. If it is upon the oil present that we must depend for this elixir, then a tablespoonful of pure gum-turpentine will furnish the same amount of remedial as an entire crate of citrus fruit, providing we eat the peel and all. If it is due to the phosphoric acid as phosphate, as Dygert would have us believe, then a glass of cow's milk would be equivalent to a dozen grapefruit in this life-giving entity. If it is due to the alkaloids present in the citrus fruits, then they have no therapeutic value, for no alkaloid has been detected in any of the citrus fruits regularly marketed in this country, and it is not likely that an alkaloid exists in any of the citrus family.

ABSORPTION THROUGH THE VAGINA

It has long been established that the sound skin is practically impermeable for watery solutions of salts and other substances. For this reason, perhaps, it has become customary to think of other surfaces closely connected with the integument as being similarly impervious to soluble products that come into contact with them. Yet everyday experience in ophthalmologic practice bears witness to the permeability of the epithelial membranes of the eyes to the drugs used in dilating the pupil for purposes of examination of these organs. Furthermore, the history of toxicology shows clearly that another structure — the vagina — which resembles the skin in many respects, except for the absence of the horny surface as its outer layer of stratified epithelium, can also be the seat of active absorption. Nevertheless, as Macht[1] has pointed out in an elaborate study of the vagina as a seat of absorption, the vagina is generally regarded as an organ incapable of absorbing pharmacologic agents. Witness to this widespread belief, he says, is the universal and indiscriminate employment by women of all kinds of medicaments — some known to be innocuous and others recognized otherwise as violent poisons — in the form of douches, tampons, suppositories, "uterine wafers," and the like.

The numbers of cases of serious intoxication due to the introduction of mercuric chlorid in solution into the vagina seems to be increasing. Clinical literature gives instances of various other harmful substances that have found their way into the organism through the vaginal membrane in sufficient amounts to give evidence of their absorption. Arsenic, zinc sulphate, iodoform, belladonna and phenol (carbolic acid) are included in the list. The excuse for these facts may perhaps be found in the still prevalent opinion that drugs applied to the vagina exert only a local effect, and cannot penetrate further into the system. Only on such a hypothesis could the almost indiscriminate employment of vaginal douches containing potent substances have been tolerated or acquiesced in, and local treatments with solutions of drugs complacently adopted by so many physicians in the past. When an untoward result has been observed, it has usually been attributed to an escape of fluid into the uterine cavity; but, according to Macht, a review of the literature reveals the fact that in many of the authentic cases described this explanation must now be abandoned in favor of absorption through the vagina.

The situation that prevails lends much significance to Macht's latest experiments in this field. From these it appears that all kinds of pharmacologic agents — alkaloids, inorganic salts, esters and antiseptics — can be absorbed with comparative ease through the vaginal walls. Macht points out that, from a therapeutic point of view, drugs such as opium or belladonna may be rationally administered for their constitutional effects through the vaginal route when suitable circumstances arise. But probably a greater emphasis needs to be placed at present on the danger that centers in the careless employment of poisonous substances that may find entrance to the organism in this hitherto unsuspected way. It is not unlikely that, in view of the widespread use of douches, etc., occasional chronic intoxications of unexplained origin may find their explanation in the absorption of the harmful substance through contact with the vagina.

War and the Sciences.—In spite of the fallacy of the German philosophers, they have, nevertheless, established in the German people action patterns of such surpassing strength that in the organized intelligence of the German people is our greatest menace. In fact, the present war is a contest of ideas rather than of men. In its broad sense it is the practical application of physics, chemistry and biology in a mass struggle for the existence of nations.—G. W. Crile, M.D., *Pennsylvania Medical Journal.*

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[1] Macht, D. I.: On the Absorption of Drugs and Poisons Through the Vagina, Jour. Pharm. col. and Exper. Therap., 1918, **10**, 509.

Current Comment

ONE NON-ESSENTIAL INDUSTRY

The question as to what constitutes a non-essential industry in war time cannot be answered offhand. The complexities of modern business are such as to make it extremely difficult to determine just what industries should be suspended under the stress of war conditions without inflicting a greater economic injury than is justified by the possible benefits that might accrue. There is one business, however, that those who have given the problem any study would have to admit should be largely dispensed with during the war — and might properly be largely dispensed with at all times — and that is the manufacture of nostrums. Every physician and every druggist knows that there is not a "patent medicine" on the market today whose place is not better filled by official products that are found on the shelves of every druggist in the country. Every physician and every druggist knows that the "patent medicine" maker aims, not to furnish drug products that can be obtained in no other form, but to duplicate in infinite variety, with secret mixtures, the non-secret preparations already on the druggists' shelves and, what is far worse, to stimulate unnecessary self-drugging on the part of the public. It is true that, if the "patent medicine" industry were destroyed, druggists would for awhile suffer financial loss, not because they derive a large profit from "patent medicines," but because the public, being deprived of the lying scare-heads of "patent medicine" advertisements, would buy fewer drugs of every kind. Certainly, however, this loss to some thousands of druggists would be an immeasurable gain to some millions of people. The exploiters of a widely heralded nostrum have bragged in their advertisements of the number of carloads of their mischievous alcoholic mixture that they have shipped to certain points. Does even the intelligent layman believe that under present conditions there is any excuse for taking up valuable shipping space with such worthless, if not dangerous, trash? And this is but one of scores. If there is one industry in the United States whose suspension at the present time is justified on the grounds of public health, greater efficiency and avoidance of waste, it is the nostrum industry.

THE MEDICAL DEPARTMENT AND THE GENERAL STAFF

The General Staff of the Army is the most important body connected with the prosecution of the war. One of the vital phases of the war is the physical condition — the health — of the soldier. It is an anachronism, therefore, that the Surgeon-General of the Army is not included in the General Staff. A recent issue of the Army and Navy Register reproduces a photograph of the Navy War Council in session; prominent among its members is the Surgeon-General of the Navy, Admiral Braisted. Somehow the Navy seems to set the pace for the Army in constructive legislation relative to medical administration; somehow the Medical Department of the Army seems to be regarded as of minor importance. Why, we do not know. Elsewhere in this issue we print the text of a bill recently introduced into the House of Representatives by Mr. Hicks to remedy the present condition. It is to be regretted that this bill includes anything more than this first section:

> "That hereafter the Surgeon-General of the Army shall be a member of the General Staff Corps, and that the number of officers of the General Staff now authorized by law be increased accordingly."

Certainly there can be no reasonable opposition to this particular part of the Hicks' bill.

THE NEW YORK HEALTH DEPARTMENT

In referring to the reactionary forces in New York that seemed to be making a political football of that city's Health Department, The Journal called attention to the fact that the efficient work of two of the bureaus of the New York Health Department had interfered with the malignant activities of certain interests. These were the Bureau of Public Health Education, headed by Dr. Charles F. Bolduan, and the Bureau of Food and Drugs, under the direction of Lucius P. Brown. Dr. Bolduan has persistently fought quackery and the nostrum menace and given the New York public many interesting facts regarding these insidious evils. The bureau headed by Mr. Brown had made it interesting for the sophisticators of foods and drugs. Since The Journal commented on the New York situation, Dr. Bolduan has been let out while Mr. Brown has been suspended! Significant, isn't it?

METABOLISM IN GOUT

The fact that the treatment of gout is very unsatisfactory and that the disease is notably intractable furnishes an added stimulus to the study of its phenomena and their presumable causes. Lusk[1] has remarked, in discussing this baffling disease, that just as the whole trouble in diabetes turns on the ability of the organism to destroy sugar, so the symptoms manifested in gout are dependent on the deposit of acid urate of sodium in certain localities. But analogies may be misleading in science. In diabetes there is an undeniable upset in the metabolism of the carbohydrates, and at certain stages doubtless also a perversion in the transformations or oxidations of other foodstuffs, notably the fats. Are we to infer that gout is a disease of metabolism in a similar sense? This question has often been asked with respect to the behavior of the purin compounds, the precursors of uric acid in metabolism. One by one the props to the older structures of the theories of the gouty diathesis have been taken away by the disclosures of experimental investigation. Gout is not due to an increased formation of uric acid, as was once believed; nor is there any evidence that the accumulation of this substance is due to a diminished destruction. Gradually attention has been focused on a change in the renal functions in gout.[2] But the question of some fundamental upset in metabolism always reasserts itself, despite the accumulated evidence that, aside from possibilities of the now denied altered metabolism of the purins, the general chemical exchanges in the body are the same in gout as in health.[3] The latest investigation, a study of the heat production of gouty persons as calculated from their oxygen consumption, shows anew that the basal metabolism falls within normal limits. Purin-yielding foods produce no change in intermediary metabolism sufficient to be detected by the method of indirect calorimetry. These observations, made by Wentworth and McClure[4] in the medical clinic of the Peter Bent Brigham Hospital, Boston, cannot exclude disturbances in "some minor phase of intermediary metabolism produced by nuclein-rich foods"; but if such exist they are surely too slight to affect the basal metabolism of persons subject to gout.

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[1] Lusk, Graham: Elements of the Science of Nutrition, Philadelphia, 1917, p. 544.

THE ACTUALITY OF COLD STORAGE IN THE FOOD SITUATION

The world war has taught us to revise our judgment on many subjects, notably in respect to foods and their distribution. Never before has this nation realized so clearly that the important staple perishable foods produced as articles of commerce must be preserved in the season of production and plenty, and carried over through the winter period by some suitable plan of conservation. Desiccation and canning have received a new impetus; old practices have been restored and new ones devised in the attempt to save and prevent the spoiling of what is perishable. The stigma has been removed from many products and procedures which in the immediate past have been obliged to contend with the prejudice of conservatism or the reaction against novelty. The cold storage process has thus succeeded in winning a better understanding for itself, so that refrigeration plants have come to occupy a recognized place in the food conservation plans. Part of the confusion about them lies in the misunderstanding of their proper uses. A cold storage warehouse "shall mean any place artificially or mechanically cooled to or below a temperature of 45 degrees above zero Fahrenheit, in which food products are placed and held for thirty days or more." The waste of fruits and vegetables cannot be prevented satisfactorily by application of cold storage, except in the case of a very few products, such as apples, pears and perhaps potatoes and onions. Nevertheless, the industry is not idle. Some conception of its capabilities is furnished by recently compiled data.[5] The combined total cold storage and packing house capacity now available or immediately proposed is nearly 500,000,000 cubic feet. To cite a few conspicuous items, this includes more than 100 million pounds of butter, nearly 800 million pounds of cheese, 7 million cases of eggs, 5 million barrels of apples, and more than 100 million pounds of poultry, without mention of the stores of meats of many varieties. In the case of meat, butter, lard, eggs, cheese and apples alone, the value of the products stored presumably far exceeds $200,000,000.

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[2] McClune, C. W.: The Renal Function in Gout, Arch. Int. Med., November, 1917, p. 641. The Renal Function and Gout, editorial, The Journal A. M. A., Jan. 5, 1918, p. 28.

[3] Magnus-Levy, A.: Berl. klin. Wchnschr., 1896, **33**, *416*; Ztschr. f. klin. Med., 1899, **36**, 353.

[4] Wentworth, J. A., and McClure, C. W.: Studies on the Metabolism in Gout, Arch. Int. Med., January, 1918, p. 84.

[5] Horne, F. A.: Cold Storage—Its Capabilities and How to Best Utilize and Extend Them, Am. Jour. Public Health, 1918, **8**, *223*.

POSSIBLE HEREDITY IN BRAIN CONVOLUTIONAL PATTERNS

The study of heredity has thrown a flood of light on the inheritance of peculiarities that characterize individuals and produce certain types of resemblances between relatives. Recurrences of form and stature, color and skin patterns, psychologic similarities and even chemical oddities of metabolism like cystinuria and alkaptonuria have been shown to fall within the schemes of explanation developed by students of genetics, and particularly as a result of experimental investigations of mendelian problems. Blue eyes and red hair and polydactylism have become amenable to interpretation in accord with established "laws of heredity." The internal organs have not yet been subjected to equally intensive research in the light of these newer generalizations. Recently, however, Sano[1] has directed attention to the possibility of hereditary resemblance in the study of the convolutional patterns of human brains, at the London County Asylums. The seeming intricacies of the convolutions and fissures of the cerebrum almost bar an adequate analysis of a problem thus complex. Nevertheless, a control of comparisons with nonrelative brains has enabled Sano to assert that the brains of relatives — brothers, parents and children — are more like one another than those of nonrelatives. This appears to be particularly true when, as in negro or other races, the types are less mixed than is the case among most British subjects. What such studies of pattern in organs may lead to no one can conjecture at present.

THE BLOT ON THE ESCUTCHEON

A reminiscent article, prompted by the death of a "patent medicine" millionaire, recently appeared in a metropolitan paper. Generalizing on the ultimate distribution of the wealth made in the nostrum business the writer says:

> The dispersal of many large fortunes accumulated in the making of pills and "cures" rarely attracts attention. The beneficiaries generally strive to hide the sources of their enrichment. A dozen cases might be mentioned of Philadelphia, Providence, Newport, and New York families whose money came from such sources, but whose members of this generation studiously avoid mention of the fact.

Well, one can hardly blame them!

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[1] Sano, F.: Morphological Investigations Upon the Convolutional Pattern of Relative Brains in Man, Proc. Roy. Soc. Med., 1917, **10**, Sec. of Psychiatry, p. 21.

Disease Prevention.—Surely our philanthropists should find as much pay in preventing misery as they do in relieving it. Preventive medicine is the watchword of the hour, and enlistment in the cause can come only through education.—M. J. Rosenau.

Association News

TWO IMPORTANT SPECIAL MEETINGS AT THE CHICAGO SESSION OF THE AMERICAN MEDICAL ASSOCIATION

Examination of Registrants—Rehabilitation of the Disabled Soldiers

The medical profession is particularly concerned with two points in the life of the soldier—one, when he enters the Army; the other, when, physically disabled, he is no longer a fighting unit. A careful selection of recruits protects the government—which means the people—against admission to the Army of men not physically fit—men who probably would become a source of expense as long as they live. When the soldier is disabled it becomes the duty of the government to restore him as nearly as possible to perfect physical condition, and to do all that is possible to fit him to fill a position in life that will not make him dependent on others for support.

THE EXAMINATION OF RECRUITS

Two important special meetings in connection with the annual session of the American Medical Association next month will be devoted to these phases of the soldier's life. The first subject will be considered on Thursday afternoon and Friday, in meetings held at the Studebaker Theater. The importance of these meetings to physicians will be appreciated when it is realized that there are between 23,000 and 25,000 physicians connected with the examination of registrants.[1] The opening meeting will be addressed by a representative from the Provost Marshal-General's Office, by some one representing the local boards, the advisory boards, by a layman to present the public's view, and by an Army medical officer representing those concerned with the final examination of recruits. The aides to the governors of the various states will be present by order of the Provost Marshal-General. At 8:30 to 10 o'clock Friday morning a meeting of the state aids will be held. The rest of the day will be devoted to a conference of all physicians engaged in the examination of registrants on various problems connected with the work, and to an explanation of the new regulations which will be ready for distribution at that time.

RECONSTRUCTION AND REHABILITATION

The meeting on reconstruction and rehabilitation of the disabled soldiers, arranged for all day Thursday at the Auditorium Theater, as was announced week before last, will consider the various phases of this timely subject—the national program; the experience of foreign countries; the transportation from overseas; reconstruction of the special senses; reclamation of the industrial workers; vocational training—in fact, every aspect of the subject will be considered by special workers and by students of the subject.

Both of these special sessions should be—and undoubtedly will be—largely attended.

THE CHICAGO SESSION

Meetings of the House of Delegates

The House of Delegates will hold its meetings during the coming annual session in the library at the headquarters of the Association, 535 North Dearborn Street. The first meeting will convene at 10 o'clock Monday morning, June 10, continuing in the afternoon. On Monday and on Tuesday, arrangements are made for the House to recess between 12:30 and 2 o'clock, when luncheon will be provided at the Hotel Virginia for the members of the House. On Monday evening the members of the House will be the guests of the Chicago Medical Society at the Hotel La Salle where a buffet supper will be served to be followed by a smoker.

Entertainment for Women Guests

Mrs. Albert J. Ochsner, chairman of the Committee on Women's Entertainment, announces the following entertainments for the wives of physicians and other women guests in attendance at the annual session:

Tuesday afternoon, June 11, informal "at home" at the Chicago Woman's Club under the auspices of the president of the Woman's Club and the Committee on Women's Entertainment.

Wednesday afternoon, June 12, a "tea" at the South Shore Club from 2 to 5 p. m. At this entertainment there will be an excellent musical program.

Thursday afternoon, June 13, reception at the Art Institute.

Medical Mobilization and the War

Personnel of the Medical Department

For the week ending May 17, 1918, the personnel of the Medical Department of the Army included:

Medical Corps: 869, including 1 major-general, 65 colonels, 110 lieutenant-colonels, 298 majors, and 395 lieutenants.

Medical Reserve Corps: 18,951, including 1,320 majors, 4,794 captains and 12,837 lieutenants. On active duty: 16,926, including 1,229 majors, 4,462 captains and 11,235 lieutenants.

Medical Corps, National Guard: 1,202, including 20 lieutenant-colonels, 244 majors, 151 captains and 787 lieutenants.

Medical Corps, National Army: 125, including 3 brigadier-generals, 14 colonels, 100 lieutenant-colonels and 8 majors.

Dental Corps, 209; Dental Reserve Corps, 5,275, of whom 1,518 are on active duty; Dental Corps, N. G., 257; Veterinary Corps, 17; Veterinary Reserve Corps, 1,443, of whom 733 are on active duty; Veterinary Corps, N. G., 40; Veterinary Corps, N. A., 496; Sanitary Corps, 1,095, and Ambulance Service, 162, constitute the remainder of the commissioned personnel.

The Discharges in all branches of the service to date are:

	Number				
Causes	M.R.C.	M.C.N.G.	D.R.C.	D.C.N.G.	San.C.
Physical disability	659	52	13	8	7
Inaptitude	250	20	5	0	2
Other branches of service	499	70	26	8	61
Resigned	114	33	8	4	7
Domestic troubles	60	0	0	0	1
Needed by community	49	0	0	0	0
Deaths	71	4	3	0	1
Dismissed	8	2	1	0	0
Duty completed	2	0	0	0	0
No reason given	14	0	1	0	0
	1,726	181	57	20	79

General Hospital Bulletin

The initial copy of "The Bulletin of the U. S. Army General Hospital No. 2" of Fort McHenry, Md., has just been received. This bulletin is to be issued monthly and is published by, and primarily for the benefit of, the medical and administrative staffs of the hospital, for a three-fold purpose: 1. To present such items of interest as administration at the hospital, important army orders of a public nature, legislation and personal notes; 2. to report cases of especial interest; 3. to be a permanent historical record of one of the largest government general hospitals which is built on the spot which is the birthplace of the national anthem. It is also aimed through the medium of this bulletin to bring about a closer cooperation of the staff of officers.

Interchange of War Prisoners

The *Riforma Medica* relates that the surgeon-general of the Swiss army has finally succeeded in arranging for the interchange between Germany and France of prisoners over 48 years old who have been in captivity for at least eighteen months. The officers in this group are to be interned in Switzerland, and the others repatriated. The commission that selects these prisoners for exchange is composed of three Swiss physicians and three physicians of the nation holding the men prisoners. The incurable and the tuberculous are also listed for repatriation and injury from an accident while at work is accepted as the equivalent for a war injury. Holland, after a year of overcoming difficulties, is said to have about completed similar arrangements for British and Teuton prisoners. There are about 8,000 C and the same number of British prisoners who will benefit by this interchange. In Italy the repatriating trains of the disabled arrive monthly. The last brought back to Italy 350 disabled soldiers and eighty officers. Besides this, there is also a weekly repatriating train of sick prisoners who are taken charge of by the Italian Red Cross as they cross the border.

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[1] There are 156 district boards, 4,643 local boards, and 1,320 medical advisory boards. It is estimated that there are 15,000 physicians connected with the local and district boards. This estimate includes not only the medical members, but also the medical consultants and medical assistants utilized by the medical men on the boards. The number of members of advisory boards is approximately 9,500.

Medical Students Exempted from the New Draft

Senate Joint Resolution No. 124 provides that medical students in bona fide attendance at recognized medical schools shall be exempt from draft under the Selective Service Law of May 18, 1917. The resolution has passed both houses of Congress and presumably will receive the approval of the President. Medical students who have attained the age of 21 years since June 5, 1917, and on or before June 5, 1918, the day set for registration by proclamation of the President; will, like all other men of the same age period, be required to register; the time and manner of claiming exemption will be defined hereafter.

No medical student entering college after the approval of the resolution is entitled to exemption. Any student entitled to exemption loses that right as soon as he ceases to be a medical student in a recognized medical school, whether his status as a student is terminated by the interruption of his medical course or by graduation.

Students of dentistry are granted no exemption by the resolution.

A Bill to Increase the Efficiency of the Army Medical Service

A clear-cut statement of the principal needs of the Army Medical Service, and a succinct and well-defined plan to meet them, are embodied in a bill introduced into the House of Representatives on May 16, by Mr. Hicks. The bill, entitled A Bill providing that the Surgeon-General shall be a member of the General Staff Corps, and for other purposes, H. R. 12,141, was referred to the Committe on Military Affairs. It is as follows:

> *Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That hereafter the Surgeon-General of the Army shall be a member of the General Staff Corps, and that the number of officers of the General Staff now authorized by law be increased accordingly.
>
> Sec. 2. That the Secretary of War shall take such measures as will fix the responsibility for sanitary defects upon the proper commanding officers.
>
> Sec. 3. That no permanent camp, cantonment, post, or station which is to be occupied by troops be established unless its selection has been duly considered and formally reported upon by the Medical Department.
>
> Sec. 4. That when a state of war exists the transportation necessary to transport medical and hospital supplies of all kinds, and the sick and wounded of the Army, whether by land or water, shall be under the exclusive control of the Medical Corps.
>
> Sec. 5. That hereafter the commissioned officers of the Medical Corps and of the Medical Reserve Corps of the United States Army on active duty shall be distributed in the several grades in the same ratios heretofore established by law in the Medical Corps of the United States Navy.
>
> The Surgeon-General shall have authority to designate as "consultants" officers of either corps and relieve them as the interests of the service may require.

"WHY IS MY SOLDIER SICK"

Antivivisectionists, Misrepresentation Exposed

(Dr. Keen to the Secretary of War)

Hon. Newton D. Baker,
Secretary of War,
War Department, Washington, D. C.

My Dear Mr. Secretary:

In a four page pamphlet entitled "Why Is My Soldier Sick?" issued by the National Antivivisection Federation, incorporated, with headquarters at 456 Fourth Avenue, New York City, are published two resolutions passed by the New York Antivivisection Society at its annual meeting, Jan. 31, 1918, and forwarded to you officially. The second resolution reads as follows:

> *Be it further Resolved,* That a copy of the foregoing resolution be forwarded to the Secretary of War as our official protest against the medical department's claim that serum inoculation is a necessary war measure and for that reason made *compulsory,* and as our protest against compulsory inoculation when *the individual* soldier conscientiously objects thereto; and *we point to the provision of exemption now made by Great Britain, that power having been forced to rescind the rule of compulsion after the alarming effects of inoculation were disclosed.*[1]

It has long been a matter of common knowledge and deeply regretted by the medical profession that Great Britain has never made antityphoid vaccination compulsory, as it fortunately is in our own Army.

In an article entitled "The Red Cross and the Antivivisectionists," a copy of which I am enclosing, I have shown by irrefutable facts how extraordinary the protection of the antityphoid vaccination has been in our Army and in the British army.

Although I knew that the statement in this resolution was an absolute falsehood, I preferred to have an authority which was beyond all question. Accordingly, on Saturday, April 27, I sent the following cable to Surgeon-General Goodwin, who occupies the same post in Great Britain that General Gorgas does in this country:

> Surgeon General Goodwin, War Office, London:
> Has antityphoid vaccination ever been compulsory in British Army?
> Keen.

To this on Monday, April 29, I received the following reply:

> London, Prof. Keen, Philadelphia:
> Antityphoid inoculation has never been compulsory in British Army.
> Goodwin.

You will observe, therefore, that this is a flat contradiction of the false assertion of the New York Antivivisection Society.

Nearly all of the British army has been voluntarily vaccinated against typhoid fever. Col. F. F. Russell in Surgeon-General Gorgas' office authorizes me to say that he understands that 99 per cent. of the British soldiers are vaccinated against typhoid fever. The reason for this is that they have seen how extraordinarily complete is the protection offered by the antityphoid inoculation. At this time the fate of the war depends largely on the health of our Army. It is in my opinion equivalent to disloyalty to deprive our soldiers of this protection and sacrifice their lives instead of the lives of a few rabbits, guinea-pigs, cats and dogs.

Yours very respectfully,
W. W. Keen.

[Note.—
And the parson made it his text that week and he said likewise,
That a lie which is half a truth is ever the blackest of lies,
That a lie which is all a lie may be met and fought with, outright,
But a lie which is part a truth is a harder matter to fight.
Tennyson.]

Treatment of War Prisoners in Germany and Austria —A Russian Account

Dr. D. P. Nikolsky of Petrograd has been compiling data from the testimony of repatriated and escaped war prisoners in Germany and Austria, especially of physicians and nurses, and of commissions sent to inspect prisoners' camps. He is publishing his report in the *Russkiy Vrach,* and the first two instalments have been received. The dates of these issues are Aug. 12 and Nov. 25, 1917, pp. 468 and 562. He comments on the Germans' having revived the ancient barbarian custom of killing war prisoners or making slaves of them, and he quotes the minister of foreign affairs, Dohlbrank's, endorsement of the deputy Wohlschmidt's suggestion to "starve the war prisoners in view of the scarcity of provisions for our own German nation." The policy, Nikolsky says, "is to feed them only enough to keep them from dying of starvation and give them warmth only enough to keep them from freezing." And even this was not always done. He states that everything was taken from the captives at once, heavy coats, jackets, and shoes as well as money, watches and identification amulets, crosses, etc. In exchange they were given old worn-out things, slippers or wooden shoes. All had to submit to this plundering, officers and physicians as well as privates. Dr. Selezneff complained to the commanding officer when his watch and chain were taken, but the officer remarked to a younger officer, "He is lying," and told the physician that if he repeated this lie he would be given twenty-five stripes.

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[1] Italics my own.

The prisoners were driven from the battlefield to the railroad without food, sometimes for seven or eight days. The inhabitants (Hungarians) heaped abuse on them, calling them "swine" and "dogs," throwing sticks and stones at them, striking them and kicking them, spitting in their faces and even tearing off the bandages from the wounded. Not only men but women took part in this abuse, and children, large and small. There were instances when the wounded or exhausted fell and the guards bayoneted them and threw them into the ditch. A party of prisoners taken at Brezin did not get any food for six days. Two of the captives slipped into a field to pick up partly rotten potatoes, but the convoy shot one and bayoneted the other. In some places they were offered bread and milk by Slavic or Polish residents, but the guards prevented their taking them or took the food away from the "Russian pigs." In some cases they had no food for nine days except discarded potatoes in the fields. Prisoners taken at the Mazurian lakes were given nothing to eat for seven days. When the prisoners reached the railroad station they were given alleged coffee, without sugar or milk, or a vegetable soup. Then they were herded in cattle cars, eighty or ninety men to a car in Germany, sixty or seventy to the smaller Austrian cars. They were not allowed to get out of the cars to attend to the calls of nature, and they had to make shift by using their caps, cloth torn from their shirts, etc., throwing them out of the car through the ventilating holes under the roof. "Some succeeded in dying in the car," one of the escaped prisoners tells, but the corpses were not taken out. Coffee and bread in small amounts were given after two or three days of this. When they stopped at a station, women in nurses' uniforms had provisions for the guards but none for the captives. Dr. Valuisky relates that when his train reached Naisse not even the wounded or the physicians were given anything to eat, but the women spread a feast for the convoy directly in front of the car with the wounded. Appeals for drinking water were unavailing. When some one brought a jug of water to the car, the guard pushed him away and poured out the water, saying "Nothing for the Russian swine." Such instances were common. Nikolsky quotes from a Russian paper Colonel Mislaivsky's story of the nurse spitting into a glass of water and flinging it into the face of a prisoner who had asked for water for a wounded comrade.

In the camp at Dunaserdagen the prisoners tore down the only building in the camp, the privy, and used the boards to strengthen the walls of their dugouts. But for this, the commanding officer had twenty of the prisoners shot and others bayoneted. As sickness became rife, shelters were built for the prisoners, long open sheds without walls. Finally walls were added, but, as one prisoner relates, "a sparrow could have flown through the cracks." Few had any stoves, and when there was a stove there was not enough fuel to heat it. Frozen feet and hands were common. Some of the Austrian barracks were of the actual prison type, with barred windows, no light or ventilation, and primitive arrangements in the building for latrines. In some of the camps, on the other hand, the latrines were at a long distance from the barrack and the prisoners were allowed to go to them only in platoons of ten under a guard convoy. At night, a platoon could be made up of five. Dr. Feinberg says that the latrine arrangements impressed him as the most humiliating of all his experiences. The provisions for officers and physicians were far from being any better than for the other prisoners, but their living quarters were separate.

The conditions as to the food at a number of different German and Austrian camps are described in detail. The portions were so inadequate that the men were weak from semistarvation and the guards mocked and jeered at them. Sometimes they were offered an extra portion, and when the men flocked with their dishes, the guards set the dogs on them and laughed as the dogs bit them. At the Altengrabow camp it is said that the vegetables for the soup, boiled without peeling, were not cleared of dirt and manure. The physicians had to stand in line with the other prisoners to get their vegetable soup or rare herring and potatoes dinner, but Dr. Feinberg relates that he finally secured a larger dish, and the physicians took turns, one getting the food for them all and bringing it to their quarters to eat.

Nikolsky is convinced that it is the deliberate policy of the Germans to undermine the health of the war prisoners so that when they return home they will be unfit not only for further military service but unfit even for self-support as citizens. They are set at tasks that tax the strength of the most robust, such as draining the swamps in northern Prussia and Schleswig, and doing caisson and diver work in building breakwaters in the Baltic.

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending May 10, 1918

		Last Week
1. ANNUAL ADMISSION RATE PER 1,000 (disease only):		
All Troops	1,335.5	1,109.7
National Guard Camps	917.3	994.
National Army Camps	1,659.5	1,222.4
Regular Army	1,148.2	1,054.1
2. NONEFFECTIVE RATE PER 1,000 ON DAY OF REPORT:		
All Troops	40.8	39.1
National Guard Camps	37.7	35.6
National Army Camps	46.7	43.8
Regular Army	37.	37.4
3. ANNUAL DEATH RATE 1,000 (disease only):		
All Troops	5.3	6.3
National Guard Camps	2.8	3.6
National Army Camps	6.	6.3
Regular Army	5.9	8.19

NEW CASES OF SPECIAL DISEASES REPORTED DURING THE WEEK ENDING MAY 10, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal		Measles	Meningitis	Scarlet Fever	Deaths	Annual Admission Rate per 1,000 (Disease Only)	Noneffective per 1,000
				Total	New Infections						
Wadsworth	1	..	..	37	...	1	..	..	0	1,033.3	48.8
Hancock	...	..	..	22	...	1	..	..	0	515.2	35.8
McClellan	2	..	3	29	19	...	1	..	2	582.4	29.2
Sevier	1	..	2	28	16	...	2	..	4	293.3	29.9
Wheeler	2	2	2	22	3	...	..	..	4	987.6	43.7
Logan	8	2	..	31	20	8	1	6	1	2,105.7	68.7
Cody	9	..	..	3	...	...	..	..	0	449.3	23.6
Doniphan	...	..	..	...	...	...	..	..	..	......	....
Bowie	3	..	1	41	41	1	..	..	12	1,254.1	38.6
Sheridan	...	..	..	21	14	...	..	..	0	462.4	28.0
Shelby	1	6	1	13	...	1	..	..	2	664.5	41.7
Beauregard	9	..	13	25	3	...	..	..	2	1,935.3	60.0
Kearny	3	..	1	5	...	3	1	1	2	1,162.9	35.5
Devens	15	..	..	686	3	18	1	2	1	1,868.3	42.8
Upton	9	..	..	231	16	5	..	6	4	1,308.4	41.7
Dix	1	..	..	175	3	25	..	39	1	1,309.2	31.6
Meade	10	..	..	124	4	6	2	3	4	1,070.7	30.9
Lee	4	..	1	202	10	26	2	..	1	977.5	38.7
Jackson	23	..	2	236	5	20	1	..	1	2,771.2	66.7
Gordon	56	..	2	85	85	88	5	2	7	2,207.8	56.4
Sherman	9	..	..	153	6	12	..	10	3	1,252.3	39.7
Taylor	17	..	..	42	2	19	..	2	3	2,115.1	69.7
Custer	38	..	..	364	3	9	..	9	8	1,621.2	31.8
Grant	8	..	..	45	...	12	..	2	3	764.9	29.1
Pike	25	..	4	61	9	22	2	..	2	2,340.2	66.3
Dodge	46	..	..	97	...	36	..	6	17	1,885.3	79.5
Funston	55	..	..	38	12	13	3	4	9	1,305.1	49.4
Travis	16	..	4	161	...	5	..	..	2	3,041.5	55.1
Lewis	9	..	1	252	4	9	1	16	3	1,466.5	37.3
Northeastern Dept.	...	..	..	9	...	2	..	4	0	837.0	30.3
Eastern Dept.	3	..	..	31	10	3	..	1	5	988.6	29.6
Southeastern Dept.	1	..	4	56	10	6	1	..	4	1,058.8	31.7
Central Dept.	8	..	..	12	9	8	..	9	1	1,188.3	44.0
Southern Dept.	10	..	1	96	31	7	..	16	14	1,220.2	41.1
Western Dept.	2	2	2	18	11	10	..	5	1	854.4	24.4
Aviation S. C.	23	5	5	132	...	26	2	20	15	1,158.1	32.5
Camp Greene	1	..	1	19	19	4	..	..	0	570.4	18.8
Camp Fremont	...	1	1	12	5	14	..	..	0	866.1	36.7
El Paso	...	..	..	6	6	...	..	1	0	794.7	4.6
Columbus Bks.	...	..	..	11	...	...	..	..	0	796.5	23.2
Jefferson Bks.	7	..	..	44	4	3	..	4	3	1,933.0	60.5
Fort Logan	2	..	..	3	2	4	..	2	1	1,387.9	78.9
Fort McDowell	...	..	1	41	...	...	..	..	0	2,157.1	58.5
Fort Slocum	1	..	..	33	...	1	..	..	2	1,495.0	38.4
Fort Thomas	...	..	..	8	...	8	..	..	1	1,256.7	29.5
D. B. Alcatraz	...	..	..	...	...	...	..	..	0	330.1	6.3
D. B. Fort Leavenworth	...	..	..	2	...	...	..	..	0	1,438.3	45.9
A. A. Humphreys	8	..	..	25	...	7	..	..	0	563.5	9.2
J. E. Johnston	10	..	2	42	25	13	3	6	1	1,355.5	37.3
Hoboken, N. J.	16	..	1	245	17	13	3	10	8	1,070.4	49.9
Camp Stuart	13	1	3	107	16	17	3	1	5	1,605.8	55.8
West Point, N. Y.	...	..	..	...	...	...	..	..	0	609.1	6.2
Edgewood-Aberdeen	...	..	..	...	...	...	..	1	1	487.7	17.3
Provisional Depot for Corps and Army Troops	3	..	1	45	4	4	..	1	0	1,404.2	47.1
Camp Holabird	...	..	..	2	...	...	..	..	0	446.7	3.2
Camp Raritan	...	..	..	...	...	...	..	..	0	493.7	26.3
Springfield Arm.	1	..	..	...	...	1	..	..	0	1,599.9	35.9
Natl. Guard Depts.	...	..	..	14	7	3	1	..	0	......	....
Natl. Army Depts.	10	..	1	316	53	34	1	11	5	......	....
MacArthur	...	..	..	...	...	1	..	..	1	810.1	50.2
Doniphan	5	..	..	19	...	2	1	5	1	3,888.1	97.6
Total	504	19	60	4,580	487	531	37	205	167	1,335.5	

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All *Troops* in U. S., Week Ending May 10, 1918	*Regulars* in U. S., Week Ending May 10, 1918	National *Guard,* All Camps, Week Ending *May 10,* 1918	National *Army,* All Camps, Week Ending May 10, 1918	Expeditionary Forces, Week Ending May 2, 1918
Pneumonia	20.0	13.8	8.3	31.2	23.5
Dysentery	*0.7*	1.1	2.1	0.0	0.7
Malaria	2.4	2.6	4.9	1.3	1.2
Venereal	182.5	123.3	59.1	270.9	35.1
Paratyphoid	0.2	0.6	0.0	0.0	0.0
Typhoid	0.1	0.3	0.0	0.0	0.2
Measles	21.1	18.6	3.2	29.8	8.5
Meningitis	*1.4*	1.57	*1.0*	1.5	2.4
Scarlet fever	8.1	10.4	1.5	9.2	8.3

NEWS OF THE CANTONMENTS

Camp *Zachary* Taylor, Lincoln Division (Eighty-Fourth) Louisville, Ky.

May 20, 1918.

MEDICAL EXAMINATIONS FOR OVERSEAS DUTY

In keeping with the plans of the War Department a board of medical officers is conducting physical examinations of soldiers for oversea duty with the idea of separating those who are *fit* and *strong* enough for foreign service from those that are *just* able to stay in this country for home service.

The first results of these medical boards has just been announced. Those men who have been found physically unfit for oversea service have been carefully examined by seven different boards, and finally by the general reviewing board. The order announcing the list also transfers all of the men to duty with the 159th Depot Brigade, which in army circles is considered an organization that will remain at the camp as a replacement unit for the duration of the war.

REFUSAL TO SUBMIT TO SURGERY

Two soldiers who faced a court martial at the camp for refusing to submit to a surgical operation have changed their minds and have undergone the operations and are doing nicely, according to medical officers. The two soldiers had refused to submit to the operation after a board of medical officers had decided that both should undergo the operations to better fit them for military service.

The Judge-Advocate of the Army recently ruled that where a soldier refused to take medical treatment or submit to an operation after a board had decided that it was necessary he was subject to trial by court martial. The matter has been watched closely at the camp, and staff officers declare that whenever a soldier in the future refuses either medical treatment or operation, after all military regulations are complied with, he will be tried by a general court martial.

FUNERAL EXPENSE

Recent orders from Washington state that if a soldier dies in the military service the United States shall, on written application, pay the reasonable funeral expenses, including the expense of burial and the return of the body of the deceased to his home under the condition that the sum does *not* exceed $100.

TRAINING IN CONVALESCENT HOSPITAL

The infirmary will be under the *direct* jurisdiction of
Lieut.-Col. Will L. Pyles, commanding officer of the hospital,
but Lieut. Sites of the One Hundred and Fifty-*Ninth* Depot
Brigade has been *designated* as the *officer* in charge of the
military instructions of the patients. The idea is to prevent
as *far as possible, loss of time in army* training. Electric
buzzers are being installed so that the patients may be taught
telegraphy. They will be instructed in *wigwag* and sema-
phore signaling, receive lectures *on military* subjects, and
those whose conditions will permit will be drilled.

The *patients* will be classified into four groups. The first
group will consist of the resting cases. They will walk *to*
the mess hall for meals and receive lectures. The second
group will be made up of those able to take light exercise.
They will go out on short walks, accompanied by medical
officers. The third group will include those able to drill.
The drill *periods* will be of short duration, probably a half
hour at a time.

The fourth group will be known as the reconstruction class. Men coming into the Army through the selective draft who are found *to have slight physical* defects will be assigned to this section with a view of building them up so that they will be elegible for general military service. Special physical exercise will be *prescribed for each individual case* to meet the needs. As an illustration, a man having foot trouble will be given exercise to strengthen his feet, and a man having slight heart weakness will be given a different exercise tending to improve the heart muscles.

This system was tried out at other camps and found to be *beneficial.* Many recruits were reclaimed for the Army that otherwise would have been lost to the fighting forces. Good results are expected here.

PROMOTIONS

The following officers have been recommended for promotion as lieutenant-colonels: WALTER BENSEL, WEBSTER CALVIN, New *York City; DAVID B. DOWNING,* Detroit, Mich.; CHANNING FROTHINGHAM, Boston, Mass.; HERBERT I. HARRIS, Fort Con*stitution, N. H.; RUSSELL R. JONES,* Pittsburgh, Pa.; STEWART R. ROBERTS, Atlanta, Ga.; CHARLES H. TAIT, Philadelphia, Pa.; RAYMOND C. TURCK, Jacksonville, Fla.

Officers of the Medical Reserve Corps Recommended for Promotion as Majors, Since March 1, 1918

HENRY ABRAHM, San Francisco, Calif.; GEORGE CUMMINGS ALBEE, South Orange. N. J.; JAMES S. ALLEN, Geneva, N. Y.; ROBERT A. ALLEN, *Tacoma, Wash.; CURTIS ATKINSON, Fort Collins, Colo.; WILLIAM HUPP BALDWIN,* Memphis, Tenn.; FRANK MILAN BARNS, Harrison, Neb.; RICHARD BEW, Atlantic City, N. J.; GILBERT W. BREHM, Columbus, Ohio; BENJAMIN HENTON BROWN, Muskogee, Okla.; THOMAS A. BURCHAM, Des Moines, Ia.; *BURTON CHANCE,* Philadelphia, Pa.; WALDEMAR A. *CHRISTENSEN, Douglas, Ariz.;* ELBERT CLARK, Chicago, Ill.; WILLIAM A. CLARK, Trenton, N. J.; *CLARENDON J. COMBS,* Oshkosh, Wis.; CLINTON W. D'ALEMBERTE, Pensacola, Fla.; THOMAS C. DAVISON, Atlanta, Ga.; FRANK DEACON, Chicago, Ill.; WALTER A. DOMER, Wabash, Ind.; LUCIUS FRANCIS DONOHOE, *Bayonne,* N. J.; *FRANCIS J. EISEMAN, SUMNER EVERINGHAM,* New York City; ALBERT MARTIN FARRELL, Two Rivers, Wis.; JAMES G. GLYNN, Fort Crockett, Tex.; GEORGE S. FODEN, *Detroit, Mich.;* ALBERT P. FRANCINE, Philadelphia, Pa.; *JOSEPH* C. FRIEDMAN, Chicago, Ill.; EMERY C. GAFFNEY, Lincoln, Ill.; *GEORGE WARREN GARDNER, Providence, R. I.; FRANK WIL*LIAM GEORGE, Worcester, Mass.; ALEXANDER LIDDELL GILLARS, Pottsville, Pa.; DANIEL J. GLOMSET, Des Moines.; HARRY *SEARLS GRADLE,* Chicago, Ill.; ALLEN HAMILTON, Fort Wayne, Ind.; EDWARD L. HANES, Rochester, N. Y.; THEODORE H. *HARRELL, Gonzales, Tex.; ARTHUR HARTLEY, Philadelphia, Pa.;* WILLIAM BROWN HEAGERTY, Mazeppa, Minn.; WILLIAM H. HENGSTLER, *Minneapolis, Minn.; HENRY WILLIAMSON HOAGLAND, Fort Douglas, Utah; CHARLES W. HUGHES,* Winneconne, Wis.; WILLIAM E. KNEWSTEP, Hampton, Va.; JACOB CARL KRAFFT, Chicago, Ill.; HAROLD L. LAMB, Sauk Center, Minn.; SAMUEL LEOPOLD, Philadelphia, Pa.; JESSE D. LIPPINCOTT, Newark, N. J.; EDGAR WEBB LOOMIS, Dallas, Tex.; EZRA H. *MATHEWSON, Dallas, Tex.; JESSE G. MAXON,* Harvard, Ill.; GILPIN M. McCAIN, New York City; *BEN H. METCALF,* Winthrop, Mass.; PHILIP H. MOORE, Philadelphia, Pa.; FRANK L. MORSE, Somerville, Mass.; GEORGE STEWART MURPHY, Amarillo, Texas; THOMAS F. NEIL, East Moline, Ill.; EDMUND B. OWENS, *Dixon, Ill.; SIDNEY E. D. PINNIGER, Tracy, Calif.; MOR*RIS L. POTTS, Trenton, N. J.; JOHN ALBERT RHIEL, Malvern, Ohio; EDWARD SHERRARD RIMER, Staten Island, N. Y.; LEWIS J. ROSENTHAL, Baltimore, Md.; *RALPH TAYLOR SHIPLEY,* Carrollton, Ohio; DON HARRY SILSBY, St. Johns, Mich.; ALONZO *DEM SNYDER, Corning, Calif.; ALVINE ZENAS STONER,* Cumberland Valley, Pa.; ORVEL ADDISON SUTTLE, Mt. Vernon, Ill.; HENRY H. THOMPSON, Philipsburg, Pa.; CHARLES M. WILLIAMS, New York City; NORMAN E. *WILLIAMSON, Stockton,* Calif.; HENRY O. WYNEKEN, San Antonio, Texas.

Officers of the Medical Reserve Corps Recommended for Promotion as Captains, Since March 1, 1918

LEROY C. ABBOTT, New York City; GERALD R. ALLABEN,
Rockford, Ill.; LYTTON GRAY AMENT, Victoria, Tex.; SERGE
ANDROP, Richey, Mont.; NICHOLAS I. ARDAN, Bristol, Tenn.;
DAVID E. ARNOLD, Kerman, Calif.; *FREDERICK L. BAKER,*
Arglen, N. J.; WILLIAM MATHEWS BANE, Denver, Colo.; CLAR-
ENCE EARL BARCUS, Indianapolis, Ind.; FRANCIS OLIVER BAR-
RETT, El Paso, Tex.; CORNELIUS BERNARD BARRY, Woon-
socket, R. I.; LINDSAY WILSON BASKETT, Big Timber, Mont.;
CHARLES M. BAUMAN, St. Louis, Mo.; CLYDE McK. BECK,
Memphis, *Tenn.;* MONTE L. BELOT, Clyde, Kansas; HUGH KING
BERKLEY, San Francisco, Calif.; IVAN LESTER BIGGS, Custar,
Ohio; BENJAMIN W. BLACK, Grantsville, Utah; LAWRENCE F.
BOLAND, Stone, *Ky.; FRANK O.* BRIGHAM, Stanley, N. D.;
JOSEPH R. BROWN, San Francisco, Calif.; OSMER L. CALLAHAN,
Mount Dora, Fla.; JOHN R. CALAWAY, Mescalero, N. M.; ANDREW
C. CAMERON, Birmingham, Ala.; WILLIS W. CAREY, Fort Wayne,
Ind.; BURNS S. CHAFFEE, Pittsburgh, Pa.; CHARLES FREDERICK
CHILDS, New Boston, Ill.; HARRY A. *CLARK, Boston,* Mass.;
WM. ARTHUR CLARK, Chicago, Ill.; EDGAR CLINE, Auburn, Neb.;
GUY RUPERT COFFIN, *Monticello, Ind.;* JOSEPH F. COOK, Louis-
ville, Ky.; ROBERT PAGE COOKE, Front Royal, Va.; FREDERICK
STURGIS COOPER, Lakewood, Ohio; ARIS W. COX, Helena, Ark.;
HAROLD *BAILEY COX, Morristown,* Ind.; LAFAYETTE T. COX,
Napoleon, Ind.; CHARLES C. CRAMPTON, Delphi, Ind.; JOHN
WEBSTER CRESSLER, Wilkes-Barre, Pa.; WILLIAM F. CUN-
NINGHAM, Seattle, Wash.; THOMAS LYLES DAVIS, Augusta, Ga.;
HORACE B. DEAN, Audubon, *N. J.;* JOHN H. DOANE, Mansfield,
Pa.; *RICHARD PATRICK* DOODY, Cohoes, N. Y.; WILLIAM S.
DOW, *Brooksburg, Ind.;* DUMONT DWIRE, Pomona, Calif.; JOHN
ROSE DYSON, Hazleton, Pa.; CHARLES E. EATON, Seattle, *Wash.;*
AMBROSE EARL EDGERTON, Tucson, Ariz.; AUGUSTUS M.
EGGERS, Pittsburgh, Pa.; EDWARD PERCY EGLES, *New York City;*
LEE J. ERNSTBERGER, Louisville, Ky.; HUMPHREY NEWTON
ERVIN, Dayton, Ky.; *EDWARD P.* ESSERTIER, Hackensack, N. J.;
WILLIAM L. ESTES, South Bethlehem, Pa.; HENRY ANDREW
FISHER, Brooklyn, N. Y.; SCOTT ROMAIN FISHER, Syracuse,

N. Y.; ARTHUR JOHN FLETCHER, Connersville, Ind.; LINDSAY Z. FLETCHER, St. Louis, Mo.; CORTLAND W. W. ELKIN, Pittsburgh, Pa.; WALTER LEON ELLIS, Calexico, Calif.; OLIVER R. FORE, Flora, Miss.; FORREST F. FOWLER Round Rock, Tex.; JOHN H. FRANKLIN, Guadalupe, Calif.; WILLIAM FRIEDBERGER, Stockton, Calif.; EDMOND B. B. FULLIAM, Muscatine, Ia.; [illegible] ouis, Mo.; JULIAN E. GAMMON, Jack- [illegible] IS GARIES, Trenton, N. J.; CHARLES [illegible] WILHELM A. GARTNER, Troy, Kan.; [illegible] memoe, N. Dak.; CARL GOEHRING, [illegible] MITCHELL GOFF, Marysville, Ohio; THOS. VINCENT GOLDEN, Creston, Ia.; FRANK NEWTON GORDON, St. Louis, Mo.; EDWIN JAMES GREER, Pontiac, Mich.; LYNN T. HALL, Omaha, Neb.; ROY WALLACE HAMMACK, Los Angeles, Calif.; ROBERT R. HAMPTON, Salt Lake City, Utah; CHARLES CARLETON HARBAUGH, Sedro-Wooley, Wash.; KNUD HARTNACK, Downers Grove, Ill.; FRED E. HARVEY, Minneapolis, Kan.; LEWIS S. HARVEY, Dunlap, Kan.; AUSTIN L. HAUSLOHNER, Wilkes-Barre, Pa.; GEORGE G. HAWKINS, Ione, Calif.; NELSON J. HAWLEY, St. Louis, Mo.; CHARLES M. HENSLEY, Topeka, Kan.; JACOB MEYERS HEYDE, Londonville, Ohio.; GARLAND W. HILL, Springfield, Ky.; FRANK B. HILLER, Pinckneyville, Ill.; FRANK N. HOFFMEIER, Hagerstown, Md.; WALTER B. HOLTON, Ithaca, N. Y.; CLIFFORD L. HOOPER, Lewellen, Neb.; WM. S. HORN, Fort Worth, Tex.; HOWARD HENRY HOWLETT, Silver Springs, Md.; AUGUST B. HROMADKA, Sawtelle, Calif.; VINCENT J. IRWIN, Jr., Granby, Conn.; JAMES THOMAS JETER, Santuck, S. C.; BEVERLY N. JONES, Walnut Cove, N. C.; WM. A. JOSEPH, Hancock, Wis.; CARLETON GALE KELSEY, Hinckley, Minn.; ROBERT KNIGHT, Seneca Falls, N. Y.; HARRY KNOTT, Plymouth, Ind.; JULIUS C. KRAMER, Elyria, Ohio; RALPH H. KUHNS, Chicago, Ill.; WALTER EMERY LANG, Allentown, Pa.; HENRY M. LARSON, New York City; PERCIVAL G. LASCHE, Richland Center, Wis.; PHILIP LEWIN, Chicago, Ill.; LAUREN LINDENBERGER, Cincinnati, Ohio; A. L. LINQUIST, Omaha, Neb.; LEON STANLEY LIPPINCOTT, Brunswick, Me.; LOUIS VYASA JAMES LOPEZ, New Orleans, La.; CHESTER L. MAGEE, Los Angeles, Calif.; SAMUEL McALISTER MAUNEY, Earl, Ark.; HARVEY E. McCARTHY, Kansas City, Mo.; LEON VICTOR McVAY, Salitpa, Ala.; GEORGE HENRY MILLER, Bryn Mawr, Pa.; OSCAR LEE MILLER, Atlanta, Ga.; WILLIAM PATTON MILLIKEN, Oakland, Calif.; JAMES H. MITCHELL, Jr., Cohoes, N. Y.; WALTON I. MITCHELL, Wichita, Kan.; ROBERT BRUCE MONTGOMERY, Lemon Cove, Calif.; RAYMOND J. MULLIN, Newark, N. J.; LOUIS H. NAHUM, New York City; DEWITT B. NETTLETON, Sewickley, Pa.; WILLIAM HENRY NIX, Indiana, Pa.; WILLEY H. NORTON, Washington, D. C.; ORVIL O'NEAL, Shattuc, Ill.; GEORGE GUTTMAN ORNSTEIN, Port Chester, N. Y.; HUBLEY R. OWEN, Philadelphia, Pa.; DAVID D. PAULUS, Random Lake, Wis.; CHARLES E. PINCKNEY, Gretna, Neb.; ROBERT TILFORD PIRTLE, Louisville, Ky.; HARRY PLOTZ, Brooklyn, N. Y.; ARMSTRONG COOPER PRATT, Gallup, N. M.; WILLIAM D. RALPH, Riverside, Calif.; JAMES E. RAWLINGS, Fredericksburg, Va.; CHARLES B. REED, Washington, D. C.; GEORGE BALLANTYNE REITZ, Brooklyn, N. Y.; THOMAS JAMES RIACH, Kankakee, Ill.; LEWIS B. ROBINSON, New York City; ADDISON M. ROTHROCK, Reading, Pa.; ROYAL A. SCHAFF, New York City; HENRI SCHMID, Coraopolis, Pa.; GEORGE FRED SCHMIDT, Pipestone, Minn.; GROVER C. SCHWARTZ, Perkasie, Pa.; WILLIAM MARVIN SCRUGGS, Rutherfordton, N. C.; AUSTIN HENRY SEEDS, Columbus, Ohio; WALTER LEO SMALL, Kansas City, Mo.; DANIEL CLARKE W. SMITH, Baltimore, Md.; HENRY G. SMITH, Cedar Grove, N. J.; CLYDE K. STARTZMAN, Bellefontaine, Ohio; JAMES STEINBERG, Los Angeles, Calif.; JOHN A. STEWART, Portland, Ore.; TIMOTHY F. X. SULLIVAN, New York City; FRANCIS J. TALBOT, Niagara Falls, N. Y.; JACKSON TEMPLE, Santa Rosa, Calif.; JOHN WESLEY TIPPIE, Cleveland, Ohio; ELTON L. TITUS, [illegible] ARTHUR MAURICE TWEEDIE, Los Angeles, [illegible] GEORGE P. TYLER, Jr., Ripley, Ohio; JOSEPH M. ULRICH, [illegible] MATTHIAS A. WAGNER, Lima, Ohio; ALFRED [illegible] WALKER, Birmingham, Ala.; CLYDE EMIL WATSON, Nampa, Idaho; CHARLES C. WATT, Jr., Philadelphia, Pa.; LEWIS HILL WEED, Baltimore, Md.; ARTHUR WILLIAM WERMUTH, Chicago, Ill.; FRANK ROBERT WHEELOCK, Scranton, Pa.; IRVING HENRY WILLETT, Gary, Ind.; HARRY JOSIAH WILEY, Porterville, Calif.; PAUL RAYMOND WILLIAMS, Cape Girardeau, Mo.; CLAUDE WILSON, Greenville, Ky.; FRED DeG. WILSON, Downsville, N. Y.; HOMER SMITH WILSON, Grove City, Pa.; CHARLES JEFFERSON WOODS, New York City; JAMES N. WORCESTER, New York City; EDWARD M. YOUNG, Sheridan, Ind.; WILLIAM J. YOUNG, Orono, Maine; ABRAHAM ZINGHER, New York City.

ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

To Camp Dix, Wrightstown, N. J., *Williamsbridge, N. Y.*, and *Hoboken, N. J.*, for conference, and on completion *to his proper station*, Lieut.-Col. PEARCE BAILEY.

To Camp Las Casas, San Juan, Porto Rico, as camp surgeon, from Washington, Lieut.-Col. WILLIAM F. LIPPITT.

To Charlotte, N. C., and *Anniston, Ala.*, for duty, and on completion *to his proper station*, Col. ROBERT E. NOBLE.

To Fort Bayard, N. M., as commanding officer of the U. S. Army General Hospital, from Fort Oglethorpe, Col. HENRY P. BIRMINGHAM.

To Fort Oglethorpe as commandant of Medical Officers' Training Camp, from Washington, D. C., Col. EDWARD L. MUNSON. For inspection, and on completion *to Washington, D. C.*, for consultation, and on completion *to his proper station*, from Fort Leavenworth, Lieut.-Col. CHARLES F. CRAIG.

To New York City for duty, and on completion *to his proper station*, Col. REUBEN B. MILLER. Cornell Medical College for instruction in military roentgenology, from Camp McClellan, Major ALBERT B. DAVIS.

To Philadelphia, Pa., New York City, New Haven, Conn., Otisville, N. Y., and *Long Beach, N. J.*, for duty, and on completion *to their proper stations*, Lieut.-Cols. JOHN A. HORNSBY, FLOYD KRAMER.

To Washington, D. C., for consultation, and on completion *to his proper station*, Lieut.-Col. WILLIAM H. SMITH. For duty in the Surgeon-General's Office, Lieut.-Col. WILLIAM J. L. LYSTER.

To Whipple Barracks, Ariz., for duty, from Fort Bayard, Major CARL E. HOLMBERG.

The following order has been revoked: *To Whipple Barracks, Ariz.*, for duty, Major WILLIAM F. CARPENTER.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp Jackson, Columbia, S. C., base hospital, from Camp Jackson, Lieut. ROBERT GOLDTHWAITE, Montgomery.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Lieut. ROBERT E. HARWOOD, Gainesville.

To Camp Sevier, Greenville, S. C., base hospital, Lieut. JEROME MEYER, Birmingham.

To Camp Wheeler, Macon, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. ARTHUR JOHNSON, Clayton.

To Charlottesville, Va., University of Virginia, for duty, from Camp Sheridan, Lieut. SAMUEL B. NICHOLSEN, Gadsden.

To Fort Oglethorpe for instruction, Lieut. PHILIP M. KYSER, Birmingham.

To Newport News, Va., for duty, Capt.. JAMES B. LAUGHLIN, Huntsville.

Arizona

To Camp Doniphan, Fort Sill, Okla., for duty, from Camp Bowie, Lieut. GEORGE W. PURCELL, Tucson.

Arkansas

To Camp Dix, Wrightstown, N. J., for duty, from Camp Devens, Capt. FEASTER LaG. PROCTOR, Little Rock.

To Camp Doniphan, Fort Sill, Okla., for duty, from Camp Pike, Lieut. ALVIN W STRAUSS, Little Rock.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. CHARLES K. TOWNSEND, Arkadelphia.

California

To Camp Lewis, American Lake, Wash., base hospital, from Camp Cody, Lieut. GEORGE P. HALL, Sunnyvale.

To Camp Sheridan, Montgomery, Ala., base hospital, from Fort Riley, Lieut. JOHN T. KERGAN, Oakland.

To Camp Travis, Fort Sam Houston, Tex., base hospital, Capt. STEPHEN Y. VANMETER, Los Angeles.

To Fort Leavenworth, Kan., for duty, from San Francisco, Major HARRY R. OLIVER, San Francisco.

To Alcatraz, Calif., for duty, Lieut. GAIL FEHRENSEN, Inglewood.

To Camp Fremont, Palo Alto, Calif., base hospital, Capt. GEORGE W. ENSLEY, Whittier.

To Camp Grant, Rockford, Ill., for observation and treatment, Capt. FRED F. SPRAGUE, Los Banos.

To Camp Lewis, American Lake, Wash., for duty, Lieuts. HOWARD C. CRUM, Hayward; ASA G. WOODWARD, Los Angeles; CLAUDE C. LEAVERTON, RAY W. ROSSON, San Francisco.

To report by wire to the commanding general, Western Department, for assignment to duty, Lieuts. LAMBERT B. COBLENTZ, Maria; ALLEN H. VANCE, Sausalito.

To San Francisco, Calif., for instruction, and on completion *to Camp Cody, Deming, N. M.*, base hospital, Capt. LEVI L. HIGGIN, Pasadena. On completion *to Camp Kearny*, Linda Vista, Calif., base hospital, Lieut. WALTER D. BISHOP, Sawtelle. On completion *to Camp Lewis*, American Lake, Wash., base hospital, Lieut. JULIUS B. HAMILTON, Los Angeles. On completion *to his proper station* from Camp Kearny, Capt. RALPH HAGAN, Los Angeles; Lieut. JOHN H. BREYER, Pasadena.

To Starkville, Miss., to make [illegible] give medical attention to the drafted men t[illegible]titution, from Fort Riley, Lieut. RALPH M. [illegible]

Colorado

To Camp Lewis, American Lake, Wash., for duty, Capt. FRANK L. DENNIS, Colorado Springs.

To Camp Wheeler, Macon, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. JOHN F. HOWARD, Golden.

To Fort Logan, Colo., for duty, Capt. CHARLES N. FISCHER, Walden.

To Fort Riley for instruction, Lieut WILLIAM H. HALLEY, Denver; from Camp Doniphan, Lieut. ELWYN R. CLARKE, Fort Morgan.

Connecticut

To Camp Gordon, Atlanta, Ga., for duty, Lieut. BARTHOLOMEW C. PASUTH, Bridgeport.

To Camp Jackson, Columbia, S. C., with the board examining the command for nervous and mental diseases, Lieut. STANLEY B. WELD, Hartford.

To Camp Meade, Annapolis Junction, Md., for duty, from Army Medical School, Capt. JOHN A. KEYTON, Norwich.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Fort Oglethorpe, Lieut. WILLIAM S. BARNES, New Haven.

To Fort Oglethorpe for instruction, Capt. WILLIAM P. BURKE, New Haven.

To New Haven, Conn., for duty, Lieut. MARCUS C. BECK, Bridgeport.

The following order has been revoked: *To Fort Adams, R. I.*, for duty, Lieut. HOWARD D. MOORE, Danbury.

District of Columbia

To Camp Meade, Annapolis Junction, Md., for duty, from Army Medical School, Lieut. HARRY A. BISHOP, Washington.

To Newport News and *Camp Lee*, Petersburg, Va.; *Camp Jackson*, Columbia, S. C.; *Camp Joseph E. Johnston*, Jacksonville, Fla.; *Camp Hancock*, Augusta; *Camp Wheeler*, Macon, and *Camp Gordon*, Atlanta, Ga.; *Camp McClellan*, Anniston, and *Camp Sheridan*, Montgomery, Ala.; *Camp Shelby*, Hattiesburg, Miss.; *Camp Beauregard*, Alexandria, La.; *Camp Logan*, Houston; *Camp Travis*, Fort Sam Houston; *Camp MacArthur*, Waco, and *Camp Bowie*, Fort Worth, Texas; *Camp Funston*, Fort Riley, Kan.; *Scott Field*, Belleville, Ill.; *Camp Zachary Taylor*, Louisville, Ky.; *Wilbur Wright Field*, Dayton, and *Camp Sherman*, [illegible] duty, and on completion *to his proper stati*[illegible] [illegible] GARRISON, Washington.

Florida

To Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Capt. EDWARD C. BIRGE, Jacksonville.

To Camp Joseph E. Johnston, Jacksonville, Fla., Lieut. DAVID N. McQUEEN, Punta Gorda.

To Fort Oglethorpe for instruction, Lieut. ROY R. NIBLACK, New Smyrna.

Georgia

To Americus, Ga., for duty, from Atlanta, Major WILLIAM A. JACKSON, Atlanta.

To Camp Glen Burnie, Md., and *Camp A. A. Humphreys,* Accotink, Va., for duty, and on completion *to his proper station,* from Camp Meade, Lieut. RALPH E. HAMILTON, Douglasville.

To Camp Gordon, Atlanta, Ga., for duty, Lieuts. ETHRIDGE J. HALL, Adel; EDWIN R. ANTHONY, Jr., Griffin.

To Camp Hancock, Augusta, Ga., base hospital, from duty as medical aide to the Governor of Georgia, Major WILLIAM C. LYLE, Augusta.

To Camp Pike, Little Rock, Ark., base hospital, Capt. MILLER B. HUTCHINS, Atlanta.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School,* for duty, Lieut. SAMUEL LICHTENSTEIN, Augusta.

Idaho

To Camp Glen Burnie, Md., and *Camp A. A. Humphreys,* Accotink, Va., for duty, and on completion *to his proper station,* from Camp Meade, Capt. CLYDE E. WATSON, Nampa.

To Camp Pike, Little Rock, Ark., with the board examining the troops for cardio-vascular diseases, from Fort Riley, Lieut. MAURICE H. TALLMAN, Boise.

To Fort Riley for instruction, Lieut. RALPH FALK, Boise.

Illinois

To Camp Bowie, Fort Worth, Tex., as member of a board examining the command for tuberculosis, from Fort Riley, Capt. CHARLES H. POWELL, Old Ripley.

To Camp Custer, Battle Creek, Mich., for duty, Lieuts. OLIVER J. FLINT, Princeton; JAMES F. JENNINGS, Scotland.

To Camp Dodge, Des Moines, Ia., for duty, Major CHARLES D. WILKINS, Chicago; Capts. GEORGE L. A. DALE, WILLIAM K. MURRAY, Chicago; from Fort Riley, Lieut. BYFORD R. WEBB, West Frankfort.

To Camp Glen Burnie, Md., and *Camp A. A. Humphreys,* Accotink, Va., for duty, and on completion *to his proper station,* from Camp Meade, Lieut. JOHN F. GRANT, Chicago.

To Camp Gordon, Atlanta, Ga., for duty, Capt. JOHN M. AXELSON, Lieut. GUSTAVE W. LAWSON, Chicago. For temporary duty, from Atlanta, Lieut. OTTO J. SCHOTT, Chicago.

To Camp Grant, Rockford, Ill., for duty, from Jefferson Barracks, Lieut. GUY E. KROLICK, Chicago.

To Camp Hancock, Augusta, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Capt. GRANT J. GRAY, Chicago; Lieut. ARTHUR S. CAMPBELL, Oak Forest.

To Camp Meade, Annapolis Junction, Md., base hospital, from Fort Riley, Capt. WILLIAM D. NAPHEYS, Jr., Chicago; from Newport News, Lieut. GEORGE S. MATHERS, Chicago.

To Camp Pike, Little Rock, Ark., with the board examining the troops for cardiovascular diseases, Capt. WILLIAM H. BURMEISTER, Chicago.

To Camp Wheeler, Macon, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. CLAYTON J. HYSLOP, Chicago.

To Fort Riley, base hospital, Capt. JOHN C. LINDSAY, Chicago. For instruction, Capt. OLIVER M. HOLLIDAY, Melrose Park; Lieuts. VINCENT GINO, FRANCIS B. McNORTNEY, JOSEPH MOLES, JOHN H. MOORE, CHARLES E. WHITEHEAD, Chicago; RICHARD F. GREENING, Park Ridge; OFARD F. MAY, Towanda.

To Fort Sheridan, Ill., for duty, Capts. EMANUEL J. SENN, Chicago; WILLIAM F. SCOTT, Maywood; CHARLES W. HUNTER, Oneida; FRANK N. WELLS, Pittsfield; Lieuts. IRA B. ROBERTSON, HENRY J. WAY, Chicago; WILLIAM B. HARRINGTON, La Salle; CHARLES E. RISELING, Murphysboro; WILLIS F. HARVEY, Rushville.

To Rochester, N. Y., for duty, and on completion *to his proper station,* Major HARRY E. MOCK, Chicago.

To New York City, Bellevue Hospital, for instruction, and on completion *to Colonia, N. J.,* for temporary duty, from New York City, Lieut. CHESTER W. TROWBRIDGE, Oak Park. Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Capt. CHARLES FORD, Waggoner; Lieuts. PETER G. KITTERMAN, LUTHER L. TURNER, Chicago.

To report by wire to the commanding general, Central Department, for assignment to duty, Lieut. HARRY L. KAMPEN, Monmouth.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, from New York City, Capt. CLARENCE W. GEYER, Aurora.

The following orders have been revoked: *To Chicago, Ill.,* University of Chicago, Lewis Institute, and Harrison Technical High School, to make physical examinations and give medical attention to the drafted men enrolled at these institutions, and on completion *to his proper station,* Lieut. JACOB A. GOODMAN, Chicago. *To Fort Riley* for instruction, Lieut. JAMES N. BUCHANAN, Chicago.

Indiana

To Camp Dodge, Des Moines, Iowa, for duty, Capt. GEORGE W. TWOMEY, Elkhart; Lieut. REVEL F. BANISTER, Washington.

To Camp Lee, Petersburg, Va., for duty, Lieut. EDWIN E. KIME, Indianapolis.

To Fort Oglethorpe for instruction, Capt. LINLEY M. REAGAN, Tipton; Lieuts. CARLTON L. ROWELL, Valparaiso; from Camp Sherman, Devens, Lieut. THOMAS P. GOVAN, Richmond; from Camp Sherman, Lieuts. HARVEY K. STORK, Huntingburg; LEO A. SALB, Jasper. [illegible] *D. C.,* for temporary duty, Capt. JOHN R. NEW-[illegible]

[illegible] er has been revoked: *To Rochester, Minn.,* Mayo Clinic, for instruction, and on completion *to his proper station,* from Camp Custer, Lieut. JOHN G. GLACKMAN, Hatfield.

Iowa

To Camp Dodge, Des Moines, Ia., base hospital, Capt. ARTHUR H. McCREIGHT, Fort Dodge. For duty, Lieut. MALCOLM S. CAMPBELL, Malvern.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Camp Logan, Lieut. RAYMOND H. MUNFORD, Dodge City.

To Camp Lewis, American Lake, Wash., for duty, Lieuts. COLIN C. THOMAS, Monticello; WILLIAM N. GORDON, Rowan.

To Fort Riley for instruction, Lieut. JOHN T. HANNA, Kellogg.

To Long Island, City, L. I., N. Y., for duty, from Camp Wheeler, Lieut. JOHN D. HEXOM, Decorah.

To New Orleans, La., Tulane University, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Fort Riley, Lieut. DAN L. MAHONEY, Dubuque.

Tuscaloosa, Ala., University of Alabama, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Fort Oglethorpe, Lieut. GEORGE H. STEELE, Belmond.

The following order has been revoked: *To Camp Fremont,* Palo Alto, Calif., base hospital, from Camp Lewis, Capt. MARCUS C. TERRY, Jr., Brighton.

Kansas

To Camp Dodge, Des Moines, Ia., for duty, from Fort Riley, Lieut. HUGH L. CHARLES, Atchison.

To Fort Riley, base hospital, Capt. WILLIAM G. MANESS, Preston. For instruction, Lieut. CARL C. CULVER, Burlington.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Hoboken, Lieut. JAMES A. H. WEBB, Stafford.

The following order has been revoked: *To Rockefeller Institute* for instruction and on completion *to Camp Shelby,* Hattiesburg, Miss., base hospital, from Fort Riley, Lieut. NOBLE E. MELENCAMP, Dodge City.

Kentucky

To Camp Gordon, Atlanta, Ga., for duty, Capt. LLEWELLYN P. SPEARS, Louisville.

To Camp Jackson, Columbia, S. C., base hospital, Lieut. JOHN W. MOSS, Louisville.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Capt. PERRY W. BUSHONG, Edmonton.

To Camp Shelby, Hattiesburg, Miss., base hospital, from Camp Wadsworth, Lieut. CARL C. HOWARD, Glasgow.

To Camp Sheridan, Montgomery, Ala., for duty, Capt. HERBERT S. CHASE, Junction City.

To Camp Crane, Allentown, Pa., base hospital, Lieut. ROBERT SORY, Madison.

To Camp Gordon, Atlanta, Ga., for duty, Lieuts. WILLIAM B. NEGLEY, Henderson; JOHN W. DYER, Louisville; SMITH A. BLACKSMITH, Versailles.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Capt. SAMUEL B. PULLIAM, Paducah.

To Camp Lee, Petersburg, Va., for duty, Lieut. EDWARD L. INMAN, Williamsburg.

To Camp Zachary Taylor, Louisville, Ky., base hospital, Capt. RICHARD F. DUNCAN, Tompkinsville; from Camp Dodge, Capt. STEPHEN C. McCOY, Louisville.

To Fort Oglethorpe for instruction, Capt. JOHN L. STILLINGS, Green Mount.

To report by wire to the commanding general, Central Dept., for assignment to duty, Capt. GEORGE M. SHAUNTY, Louisville.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School* for duty, Lieut. STONEWALL J. SMOCK, Glasgow.

Louisiana

To Army Medical School for instruction, from Camp Jackson, Capt. RALPH HOPKINS, New Orleans.

To Austin, Tex., University of Texas, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Fort Sam Houston, Lieut. WALTER P. LAMBETH, Allendale.

To Camp Shelby, Hattiesburg, Miss., as a member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieuts. HENRY C. LOCHTE, New Orleans; EWELL A. KLEINPETER, Thibodaux.

To Chicago, Ill., for duty, and on completion *to Washington, D. C.,* Major ISADORE DYER, New Orleans.

To Fort Oglethorpe for instruction, Lieuts. DAWSON T. MARTIN, Acy; JOHN P. FRAZER, DeRidder; JAMES W. KIRBY, HENRY W. REEVES, New Orleans.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to Camy Shelby,* Hattiesburg, Miss., base hospital, Lieut. WILTZ McP. LEDBETTER, Shreveport.

To Washington, D. C., for consultation, and on completion *to Camp Beauregard,* Alexandria, La., base hospital, Major JOSEPH A. DANNA, New Orleans.

Maine

To Camp Devens, Ayer, Mass., base hospital, Capt. FRED E. WHEET, Rumford.

To Camp Sevier, Greenville, S. C., for duty, Capt. ALBA G. WALKER, Houlton. As a member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. CHARLES B. SYLVESTER, Harrison. Base hospital, Lieut. JAMES W. STURTEVANT, Dixfield.

To Fort Oglethorpe for instruction, Lieut. WILLIAM E. EMERY, Bangor.

To New Haven, Conn., as instructor, from Fort Oglethorpe, Major NELSON E. NICHOLS, Portland.

To Williamsbridge, N. Y., for duty, from Fort Slocum, Lieut. ARTHUR C. WRIGHT, Augusta.

Maryland

To Camp Crane, Allentown, Pa., base hospital, from Camp Jackson, Major ANDREW J. N. REIK, Baltimore.

To Camp Lee, Petersburg, Va., for duty, Capt. WILLIAM D. SCOTT, South Baltimore.

To Fort Oglethorpe for instruction, Lieut. MOSES L. LICHTENBERG, Baltimore.

To Waynesville, N. C., for temporary duty, from Edgewood, Lieut. MOSES R. KAHN, Baltimore.

Massachusetts

To Camp Devens, Ayer, Mass., base hospital, Majors SAMUEL J. MIXTER, JOHN J. THOMAS, Boston; from Boston, Capt. CORNELIUS McGILLICUDDY, Boston; Lieuts. WILLIAM K. TURNER, New Bedford; WILLIAM J. HARKINS, Quincy. For duty, from duty as a contract surgeon, Capt. HORACE K. BOUTWELL, Brookline. To examine the command for nervous and mental diseases, Lieut. EARLE H. MACMICHAEL, Malden.

To Camp Sheridan, Montgomery, Ala., for duty, from Camp MacArthur, Major CHARLES DUDLEY, Kingston.

To Aberdeen, Md., for duty, from Dansville, Major ARTHUR H. CROSBIE, Boston.

To Army Medical School for orthopedic instruction, and on completion *to his proper station,* from Boston, Capt. MARK H. ROGERS, Boston.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. HENRY ZIMMERMAN, Springfield.

To Camp Hancock, Augusta, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. JOSEPH J. COSGROVE, Westfield.

To Camp Meade, Annapolis Junction, Md., for instruction in duties of division psychiatrist, Major GEORGE E. McPHERSON, Medfield.

To Camp Sevier, Greenville, S. C., for duty, Capt. DANIEL C. GREENE, Newton Centre; CHARLES W. ROBERTSON, North Dena.

To Fort Oglethorpe, base hospital, from Camp Dix, Lieut. DANIEL I. FENNELLY, Fall River. For instruction, Capt. BERNARD RABINOVITZ, Springfield; Lieuts. PAUL W. EMERSON, Boston; WALTER C. FRIDAY, Maben.

To Fort Slocum, N. Y., for duty, from Camp Dix, Capt. ALFRED P. CHRONQUEST, Hathorne.

To Newport News, Va., for duty, from Fort Sam Houston, Lieut. CHARLES B. SPRUIT, Boston.

To Saybrook, Conn., for duty, from Fort H. G. Wright, Capt. ARTHUR P. PERRY, Boston.

To Walter Reed General Hospital, Takoma Park, D. C., for conference, and on completion *to his proper station,* Major KENDALL EMERSON, Worcester.

To Washington, D. C., for temporary duty in the Surgeon-General's Office, Lieut. McIVER WOODY, Boston.

Michigan

To Camp Custer, Battle Creek, Mich., base hospital, Capts. HARRY F. TAYLOR, Mt. Clemens; GEORGE W. MacKINNON, Oxford. For duty, Capt. WALTER R. T. SHARPE, Romeo.

To Camp Dodge, Des Moines, Ia., for duty, Capt. JAMES W. McEWAN, Detroit; Lieut. FREDERICK C. MAYNE, Charlevoix.

To Camp Grant, Rockford, Ill., base hospital, Major MAX BALLIN, Detroit.

To Camp Sevier, Greenville, S. C., as orthopedic surgeon, from Walter Reed General Hospital, Lieut. HAROLD A. BECK, Detroit.

To Camp Shelby, Hattiesburg, Miss., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. JOHN J. MILLER, Berlin.

To Fort Oglethorpe for duty, from Camp Lee, Capt. HUGH McD. BEEBE, Ann Arbor. For instruction, Capt. JOHN P. BLAND, Adrian; Lieuts. LLOYD G. CAMPBELL, Birmingham; ALONZO B. PERSLEY, CLARENCE STEFANSKI, Detroit; WALTER VAN DE ERVE, Norway.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to his proper station,* from Camp Sheridan, Capt. FRANK C. KINSEY, Grand Rapids.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieut. ZENO L. KAMINSKI, Detroit. Neurological Institute, for instruction, and on completion *to his proper station,* from Camp Custer, Major ROY B. CANFIELD, Ann Arbor.

To report by wire to the commanding general, Central Department, for assignment to duty, Capt. WYNNE C. GARVIN, Millington.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to his proper station,* from Camp Grant, Lieut. EMIL V. MAYER, Detroit.

Minnesota

To Camp Dodge, Des Moines, Ia., base hospital, Lieut. MacSEHAM, Minneapolis.

To Camp Lewis, American Lake, Wash., for duty, Capt. HARRY S. JONES, Minneapolis; Lieuts. SIMON O. WALKOWIAK, Duluth; WILLIAM H. CONNER, Finlayson; GERHARD F. HARTWIG, Young America.

To Fort Oglethorpe for instruction, Lieut. GEORGE V. LYNCH, St. Paul.

To Fort Riley, base hospital, from Camp Grant, Lieuts. WILLIAM R. WINNE, Rochester; WILLIAM A. MEIERDING, Springfield.

To Fort Snelling, Minn., for duty, from Camp Shelby, Capt. GEORGE H. NORRIS, Annandale.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Camp Grant, Lieut. IRVING G. WILTROUT, Minneapolis.

To Washington, D. C., for duty in the Surgeon-General's Office, Major CHARLES G. MAYO, Rochester.

Mississippi

To Fort Sam Houston, Tex., for duty, Capt. JOHN E. DAVIS, Columbus; Lieut. WALTER C. ROYALS, Meridian.

Missouri

To Army Medical School for duty, Lieut. EUGENE B. MUNIER, Bradleyville. For instruction, Lieut. HOWARD S. MAUPIN, Shelbina.

To Camp Bowie, Fort Worth, Tex., as member of a board examining the command for tuberculosis, from Fort Riley, Lieut. ARTHUR W. KOESSEL, St. Louis.

To Camp Custer, Battle Creek, Mich., base hospital, from St. Louis, Lieut. GEORGE M. MYERS, St. Louis. For duty, Lieut. DEWILTON TIMBERMAN, St. Louis.

To Camp Dodge, Des Moines, Ia., for duty, Lieut. HARRY BRAUN, Independence.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. MAURICE J. LONSWAY, St. Louis.

To Camp Kearny, Linda Vista, Calif., base hospital, Capt. LOUIS A. KEMPFF, St. Louis.

To Camp Sevier, Greenville, S. C., base hospital, Lieut. JULIUS A. ROSSEN, St. Louis.

To Fort Riley, base hospital, Capt. JOHN H. GEORGE, Leeds; Lieut. JOSEPH Z. GLENN, St. Louis.

To Millington, Tenn., Park Field, for inspection, and on completion *to Lonoke, Ark.,* from Lonoke, Capt. DON R. JOSEPH, St. Louis.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Colonia, N. J., for temporary duty, Capt. VICTOR CADWELL, Poplar Bluff. On completion to Camp Wadsworth, Spartanburg, S. C., base hospital, Capt. WM. T. ELAN, St. Joseph.

Montana

To Camp Lewis, American Lake, Wash., base hospital, Capts. DONALD A. McCLENNAN, Cascade; JOHN T. FOLEY, Lewistown. For duty, Lieut. WENDELL COTTON, Forsyth.

To Chicago, Ill., University of Chicago, *Lewis Institute* and *Harrison Technical High School,* to make physical examinations and give medical attention to the drafted men enrolled at these institutions, and on completion *to his proper station,* from Camp Dodge, Lieut. MARK T. VORNHOLT, Glasgow.

To Fort Riley for instruction, Lieut. CHRIS E. EMERY, Butte.

To San Francisco, Calif., for instruction, and on completion *to Camp Lewis,* American Lake, Wash., base hospital, Capt. MAX A. DORLAND, Anaconda.

The following order has been revoked: *To Jefferson Barracks, Mo.,* for temporary duty, and on completion *to his proper station,* from Camp Doniphan, Lieut. JOHN J. TOBINSKI, Missoula.

Nebraska

To Burlington, Vt., University of Vermont, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Camp Dix, Capt. WILLIAM J. PINKERTON, Bostwick.

To Camp Pike, Little Rock, Ark., for duty, from Camp Dodge, Lieuts. FRANCIS M. SWARTWOOD, Bethany; HAL D. WILMETH, Lincoln; ARTHUR M. SONNELAND, Norfolk.

To Camp Sevier, Greenville, S. C., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Capt. WILLIAM N. ANDERSON, Omaha; Lieut. TORRENCE C. MOYER, Lincoln.

To Fort Riley, base hospital, Capt. WILLIAM EVANS, Columbus. For instruction, Capt. JAMES S. TAYLOR, Fairbury. For temporary duty, Lieut. HARVEY B. STAPLETON, Omaha.

To Fort Sam Houston, Tex., for duty, Lieuts. JOHN T. REES, Fort McDermitt; EDWARD A. VAN VLEET, Omaha; WILLIAM S. DINSMORE, Pierce.

To report by wire to the commanding general, Central Dept. for assignment to duty, Capt. FRANK C. GENUNG, Wausa.

Nevada

To Camp Fremont, Palo Alto, Calif., base hospital, from San Francisco, Capt. BENJAMIN F. CUNNINGHAM, Reno.

New Jersey

To Camp Dix, Wrightstown, N. J., for duty, Lieut. CHARLES BROWNE, Princeton.

To Camp Gordon, Atlanta, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. SAMUEL BLAUGRUND, Trenton.

To Camp Grant, Rockford, Ill., as member of a board examining the command for tuberculosis, from Fort Riley, Lieut. LEO V. ROSENTHAL, Trenton.

To Camp Hancock, Augusta, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Capt. GRANT THORNBURN, Newark.

To Camp Lee, Petersburg, Va., for duty, Lieuts. SAMUEL S. FERN, Elizabeth; ELMER M. MOUNT, Jersey City.

To Camp Wadsworth, Spartanburg, S. C., with the board examining the troops for cardiovascular diseases, Lieut. JAMES D. TRASK, Jr., Highlands.

To Fort Oglethorpe for instruction, Capt. WILLIAM H. SLOCUM, Long Branch; Lieut. HARVEY W. HARTMAN, Mayport.

To Rockefeller Institute for instruction in treatment of infected wounds, and on completion *to Camp Greene,* Charlotte, N. C., base hospital, from New York City, Lieut. LEONARD M. KALAHER, Jersey City.

The following order has been revoked: *To Hoboken, N. J.,* for duty, from Fort Oglethorpe, Lieut. HENRY KLAUS, West Hoboken.

New Mexico

To San Francisco, Calif., for instruction, and on completion *to his proper station,* from Camp Cody, Capt. OLIVER J. WESTLAKE, Silver City. On completion *to Camp Lewis,* American Lake, Wash., base hospital, Lieut. LAMENT A. HUBBARD, Van Houten.

New York

To Washington, D. C., -St. Elizabeth's Hospital, for intensive training, Capts. HERMAN L. RAYMOND, Collins; WILLIAM R. WOODBURY, Rochester.

To Williamsbridge, N. Y., for duty, from Surgeon-General's Office, Major SIGMUND POLLITZER, New York. For observation and treatment, Capt. WALTER W. OSGOOD, Jordan. For temporary duty, Lieut. CLARENCE P. THOMAS, New York.

To Camp Beauregard, Alexandria, La., base hospital, from Walter Reed General Hospital, Major THOMAS W. HASTINGS, New York.

To Camp Dix, Wrightstown, N. J., base hospital, from Washington, Major SIDNEY R. BURNAP, New York; from Camp Sevier, Capt. GREGORY J. COSTIGAN, New York; from Camp Upton, Lieut. GEORGE W. SCHENCK, New York.

To Akron, Ohio, University of Akron, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, Lieut. CHARLES GOTTLIEB, New York.

To Army Medical School for instructions, Lieut. EUGENE D. QUINLAN, Allegany.

To Camp A. A. Humphreys, Accotink, Va., to examine the command for tuberculosis, from Fort Oglethorpe, Capt. EDWARD P. EGLES, New York.

To Camp Devens, Ayer, Mass., for duty, from New York, Major LEWIS T. GRIFFITH, New York. Base hospital, Major CHARLES H. YOUNG, Lieut. HERMAN SMITH, New York.

To Camp Dix, Wrightstown, N. J., base hospital, from Williamsbridge, Capt. EDMOND J. BARNES, New York.

To Camp Gordon, Atlanta, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. LAURENCE B. BOYLAN, Woodhaven. For duty, Lieut. MOSES LOBSENZ, New York.

To Camp Hancock, Augusta, Ga., as member of a board of medical officers for the special examination for tuberculosis, Lieut. ELIAS GAMRIN, New York.

To Camp Lee, Petersburg, Va., for duty, Capt. NELSON W. JANNEY, New York; Lieuts. LESTER E. SANFORD, Albany; ABRAHAM SHORR, Brooklyn; RAY WOODWARD, Lackawanna.

To Camp Pike, Little Rock, Ark., base hospital, Capt. NELSON W. JANNEY, New York; Lieut. HUDSON J. WILSON, Ithaca; from

Army Medical School, Lieut. EPHRAIM M. BLUESTONE, New York.

To Camp Sevier, Greenville, S. C., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. HENRY M. SPOFFORD, Batavia. Base hospital, from Camp Hancock, Lieut. WALTER G. H. POTTS, New York. For duty, Lieuts. MORRIS WEISSBERG, Brooklyn; MICHAEL F. SULLIVAN, Pyrites; JOHN C. DESLOCH, Rochester.

To Camp Upton, L. I., N. Y., base hospital, Capt. FREDERICK M. BARNEY, Dolgeville.

To Camp Wheeler, Macon, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Capts. JOSEPH P. O'BRIEN, Albany; BRUNE S. HOROWICZ, MILTON SCHAIE, New York.

To Camp Zachary Taylor, Louisville, Ky., base hospital, Lieut. THOMAS M. MARKS, New York.

To Edgewood, Md., base hospital, Capt. FREDERICK W. FILSINGER, Buffalo.

To Fort McHenry, Md., base hospital, Lieuts. RALPH N. ARNOLD, Blackwell's Island; ADOLPH S. KRAMER, Brooklyn.

To Fort Oglethorpe for duty, Major THOMAS J. HARRIS, Lieut. JOHN L. KANTOR, *New York. For instruction*, Lieuts. HARRY J. HANDELMAN, Bronx; URBAN A. *FISCHER*, Buffalo; GEORGE J. HOGBEN, Rye; from Camp Upton, Lieut. ABRAHAM L. MARGOLIES, New York.

To Fort Sill, Okla., as a medical member of the examining board and recruiting officer, from Camp Kelly, Lieut. LAWRENCE D. CREMIN, *Ossining.*

To Hoboken, N. J., for duty, *from* Rockefeller Institute, Lieut. MORRIS MASLON, Glen Falls.

To New Haven, Conn., as instructor, from Fort Oglethorpe, Capt. JAMES W. PRICE, Saranac Lake.

To New York City, Neurological Institute, for *instruction*, *from* Army Medical School, Capt. ARTHUR F. HOLDING, New York. New York University to make physical *examinations*, and give medical attention to the drafted men enrolled at this institution, and on completion *to the inactive list*, Lieut. GEORGE KORNFELD, Brooklyn.

To Plattsburg Barracks, N. Y., for duty, Capts. VARNEY B. HAMLIN, Clinton; JAMES F. GILLETTE, New York; Lieuts. WILLIAM J. ROSS, Clayton; *MYRON E. FISHER*, Delavan; WILLARD C. THOMPSON, Plattsburg; DANIEL A. EISELINE, Shortsville.

To report by wire to the commanding *general*, Eastern Department, for assignment to duty, Capt. EDWARD L. AYMS, New York.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Bellevue Hospital*, *for further instruction*, and on completion *to Camp Meade*, Annapolis Junction, Md., base hospital, Capt. WILLIAM S. SMITH, *Brooklyn. On completion to Camp Dix*, Wrightstown, N. J., base hospital, Lieut. ROYALE H. FOWLER, Brooklyn. On completion *to Camp Grant*, Rockford, Ill., base hospital, Lieut. BURTON E. LOVESEY, *New York. On completion to Camp Shelby*, Hattiesburg, Miss., base hospital, Lieut. HERBERT M. VANN, *Brooklyn*. On completion *to Fort Oglethorpe*, Lieut. JOSEPH TENOPYR, Brooklyn. For instruction in laboratory work and on completion *to Army Medical School*, for duty, Lieut. WILLIAM C. STADIE, New York.

To Washington, D. C., for consultation, and on completion *to his proper station*, from New York City, Lieut. HENRY W. HAYNES, New York.

The following orders have been revoked: *To Camp Dix*, Wrightstown, N. J., for duty, from Camp Upton, Lieut. GEORGE W. SCHENCK, New York. *To Camp Lee*, Petersburg, Va., base hospital, from New York, Lieut. HERMAN B. PHILIPS, New York. *To College Station, Tex.*, from Houston, Capt. GEORGE W. BEEBE, Johnsville.

North Carolina

To Camp Lee, Petersburg, Va., for duty, Lieut. MAX C. KING, *Franklinton.*

To New Haven, Conn., for duty, from Fort Oglethorpe, Capt. CHARLES S. JORDAN, Asheville.

To Sheffield, Ala., for duty, Lieut. JOHN M. BARNHARDT, Mt. Pleasant.

Ohio

To Camp Beauregard, Alexandria, La., for duty, from *Fort Oglethorpe*, Lieut. RAYMOND E. GASTON, Cincinnati.

To Camp Crane, Allentown, Pa., base hospital, *from Camp Grant*, Capt. JOHN H. HARVEY, Toledo; from Camp Dix, Lieut. HAROLD O. RUH, Cleveland.

To Camp Dodge, Des Moines, Iowa; *Camp Grant*, Rockford, Ill., and *Camp Zachary Taylor*, Louisville, Ky., for conference, and on completion *to his proper station*, from Fort Riley, Major WILLARD J. STONE, Toledo.

To Camp Fremont, Palo Alto, Calif., for duty, from Camp Lewis, Lieut. CHARLES F. MORRIS, Youngstown.

To Camp Custer, Battle Creek, Mich., for duty, Capt. ORR A. DICKSON, Jefferson.

To Camp Dodge, Des Moines, Ia., for duty, Capt. OLIVER H. PINNEY, Cincinnati.

To Camp Lee, Petersburg, Va., for duty, Lieut. GEORGE A. ROWLAND, Delaware.

To Camp Shelby, Hattiesburg, Miss., as member of a board of medical officers *for the special* examination for tuberculosis, from Fort Oglethorpe, Capt. CARL MULKY, Warrensville.

To Camp Sherman, Chillicothe, Ohio, base hospital, Capt. JAMES T. *MERWIN, Athens.*

To Chicago, Ill., for orthopedic instruction, from Fort Riley, Lieut. RAY B. BOWEN, Toledo.

To Fort Oglethorpe for instruction, Capts. SMITH E. McADOO, Akron; HIRAM P. H. ROBINSON, Medina. Lieuts. RALPH T. SAUNDERS, Findlay; MELVILLE F. WALKER, Cincinnati.

To Fort Riley, evacuation hospital, from Fort McPherson, Major JOSEPH L. RANSCHOFF, Cincinnati.

To New York City, Cornell Medical College, for instruction in military roentgenology, Capt. JOHN D. OSMOND, Cleveland.

To report by wire to the *commanding general*, Central Department, for assignment to duty, Lieut. WARREN B. KEATOR, Findlay.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Hoboken, N. J.*, for temporary duty, Capt. JOHN J. SILBAUGH, Lancaster.

The following order has been revoked: *To Camp Crane*, Allentown, Pa., base hospital, from Camp Grant, Capt. JOHN H. HARVEY, Toledo.

Oklahoma

To Del Rio, Tex., for duty, from Fort Sam Houston, Major JULIUS A. MULLER, Snyder.

To Fort Oglethorpe for instruction, Lieut. WALTER H. DERSCH, Oklahoma City.

To Fort Riley for instruction, Lieut. ARLANDER S. GRAYDON, Idobee.

To Fort Sam Houston, Tex., for duty, Lieut. ROBERT E. L. THACKER, Lexington.

To Tulsa, Okla., to examine the applicants for appointment in the Medical Reserve Corps of the Army and on completion *to the inactive list*, Lieut. LLOYD M. SACKETT, Oklahoma City.

The following order has been revoked: *To Jefferson Barracks, Mo.*, for temporary duty, and on completion *to his proper station*, from Camp Doniphan, Lieut. CLYDE F. LOY, Shawnee.

Oregon

To Camp Gordon, Atlanta, Ga., for duty, *from* Army Medical School, Lieuts. EMILE C. JOSEPH, Corwallis; GLENN E. PRIME, Falls City; HARRY E. SHOOT, Portland.

To Camp Lewis, American Lake, Wash., for duty, Lieuts. JACOB PRINZING, Ontario; WILLIAM B. HAMILTON, LEON E. STORY, Portland.

To Fort Riley for instruction, Capt. BENJAMIN F. SCAIEFE, Eugene.

To San Francisco, Calif., for instruction and on completion *to Camp Kearny*, Linda Vista, Calif., base hospital, Lieut. ROSCOE W. CAHILL, Portland.

Pennsylvania

To Camp Lee, Petersburg, Va., base hospital, Lieut. EDWIN P. LONGAKER, *Philadelphia; from New York City, Major* EWING W. DAY, Pittsburgh.

To Fox Hills, N. Y., for duty, Capt. FRANK B. GUMMEY, Philadelphia.

To Hoboken, N. J., base hospital, Lieut. HENRY WILDERMAN, Philadelphia. For *temporary duty*, Lieut. *CLAIR* F. VALE, Philadelphia.

To Jeffersonville, Ind., for duty, from Camp Gordon, Lieut. LEON FELDERMAN, Philadelphia.

To Army Medical School for instructions, Lieut. GILBERT L. DAILEY, Harrisburg.

To Camp Beauregard, Alexandria, La., as member of a board of medical *officers for the special examination for tuberculosis, from* Fort Oglethorpe, Lieut. ALFRED A. FERRY, Philadelphia.

To Camp Crane, Allentown, Pa., base hospital, Lieut. JOHN R. DAVIES, Philadelphia. For duty, Lieut. NORTIMER *W. BLAIR, Philadelphia.*

To Camp Glen Burnie, Md., and *Camp A. A. Humphreys*, Accotink, Va., for duty, and on completion *to his proper station*, from Camp Meade, Lieuts. RALPH L. ENGLE, ABRAHAM TRASOFF, Philadelphia.

To Camp Gordon, Atlanta, Ga., for orthopedic instruction, from Fort Oglethorpe, Lieut. WILLIAM G. ELY, Philadelphia.

To Camp Grant, Rockford, Ill., as member of a board examining *the* command for tuberculosis, from Fort Riley, Lieut. HUGO N. SARCHET, Pittsburgh. Base hospital, from New York City, Lieut. THOMAS M. McMILLAN, *Philadelphia.*

To Camp Hancock, Augusta, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. THOMAS L. COLEY, Philadelphia.

To Camp Lee, Petersburg, Va., for duty, Lieuts. JOHN W. MACMULLEN, Harrisburg; JACOB M. CAHAN, *Philadelphia*; ROBERT McG. HURSH, Steelton.

To Camp Meade, Annapolis Junction, Md., for duty, from Army Medical School, Capt. *JAMES A. BUCHANAN, Strickersville; Lieut.* LAWRENCE L. BLACKBURN, Philadelphia.

To Camp Pike, Little Rock, Ark., base hospital, Lieut. EVERETT HALE TOMB, Indiana.

To Camp Sevier, Greenville, S. C., for duty, Lieut. JOHN H. TURNER, III., Philadelphia.

To Camp Shelby, Hattiesburg, Miss., *as member of a board of medical* officers for the special examination for tuberculosis, from Fort Oglethorpe, Capt. WILLIAM RUOFF, Philadelphia.

To College Station, Pa., Penn State College, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, Lieut. WILLIAM N. WATSON, Merion.

To Fort Oglethorpe for instruction, Capt. HARRY A. SPANGLER, Carlisle; Lieuts. SAMUEL W. REEVES, Fawn Grove; EDWIN E. BROPHY, Meadville; NATHAN B. KUPFER, *Philadelphia; MAX* TISCHLER, Wilkes-Barre.

To Hoboken, N. J., for duty, from Aberdeen, Capt. JAMES L. JUNK, Connellsville.

To Lakewood, N. J., for duty, from Camp Meade, Lieut. CLARENCE A. PATTEN, Philadelphia.

To Mineola, L. I., N. Y., Hazelhurst Field, Signal Corps Aviation School, from Camp Taliaferro, Lieut. GEORGE S. CUNNINGHAM, Pittsburgh.

To New Haven, Conn., for duty, from Fort Oglethorpe, Lieut. FRANK P. D. RECKFORD, Harrisburg.

To New York City, Cornell Medical College, for instruction in military *roentgenology, from Fort Slocum*, Capt. JAMES WARD, Lucernemines.

To Philadelphia, Pa., to examine applicants for appointment to Medical Reserve Corps of the Army, Lieut. JOHN W. WEST, Philadelphia.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School*, for duty, Lieut. STANLEY P. REIMANN, Philadelphia.

To Tuskogee, Ala., Normal Institute, to make physical examinations and give medical attention to the drafted men to *be enrolled* at this institution, from Fort Oglethorpe, Lieut. PIUS A. NOLL, Glen Rock.

The following orders have been revoked: *To Jeffersonville, Ind.*, Jeffersonville Depot for duty, from Camp Gordon, Lieut. LEON FELDERMAN, Philadelphia. *To New York City*, New York University, to make physical examinations and give medical attention to the drafted *men to be enrolled at this institution*, and on completion *to his proper station*, from Madison Barracks, Capt. SYDNEY K. *FENOLLOSA*, Pittsburgh.

Porto Rico

To San Juan, Porto Rico, for duty, Capt. LEVIS C. BABCOCK, San Juan; Lieuts. MANUEL C. DUENO, Anasco; JAIME RIVAS, Caguas; JUAN G. BAJANDAS, Maunabo; JOSE A. LOYALA Penuelas; JOSE B. GOTAY, Ponce; JOSE F. TRILLA, Trujillo Alto; JAMES S. M. PRESSLY, Viequez; ANTONIO ARBONA, Villalba; MIGUEL A. MARIANI, Yauco.

South Carolina

To Camp Gordon, Atlanta, Ga., for duty, Lieut. HAWKINS W. CORBETT, Mayesville.

To Camp Sevier, Greenville, S. C., for duty, Capt. EDWARD G. L. ADAMS, Columbia.

To Fort McPherson, Ga., for duty, from Army Medical School, Lieut. GEORGE F. KLUGH, Cross Hill.

To Fort Oglethorpe for instruction, from duty as a private, Lieut. JOSEPH F. GUESS, Charleston.

South Dakota

To Fort Riley for instruction, Lieut. OSCAR W. TULISALO, Bellefourche.

To report by wire to the commanding general, Central Department, for assignment to duty, Capt. CHARLES S. LANGLEY, Lake Andes.

Tennessee

To Camp Custer, Battle Creek, Mich., base hospital, Capt. WALTER S. DOTSON, Lebanon.

To Camp Gordon, Atlanta, Ga., for duty, Capts. WILLIAM P. ATCHLEY, Knoxville; from Army Medical School, WILLIAM N. LACKEY, Gallatin.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Capt. JOHN E. HALL, Nashville.

To Camp Sevier, Greenville, S. C., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut. JOHN O. WOODS, Newport.

To Fort Oglethorpe for instruction, Capt. DAVID R. NEIL, Nashville; Lieuts. ALFRED V. KEEBLER, Bristol; JOHN H. REVINGTON, Chattanooga.

To Fort Sam Houston, Texas, for duty, Lieut BOONE E. NOBLIT, Fayetteville.

To Fort Worth, Texas, Signal Corps Aviation School, from Mineola, Capt. LOUIS LEVY, Memphis.

To Hoboken, N. J., base hospital, from New York City, Lieut. THOS. O. MENEES, Nashville.

To New York City, Neurological Institute, for instruction, Lieut. RAPHAEL E. SEMMES, Memphis.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Upton, L. I., N. Y.*, base hospital, Capt. HARRISON H. SHOULDERS, Nashville.

Texas

To Camp Hancock, Augusta, Ga., base hospital, from Fort Oglethorpe, Lieut. CHARLES E. SCULL, San Antonio.

To Camp Jackson, Columbia, S. C., for duty, from Fort Oglethorpe, Lieuts. LOUIS A. EDMUNDSON, Bethel; GLENN BARTLETT, Kingsville.

To Camp Joseph E. Johnston, Jacksonville, Fla., as orthopedic surgeon, from Army Medical School, Capt. LOUIS E. DEVENDORF, Taft.

To Camp Kelly, San Antonio, Texas, for duty, from Camp MacArthur, Lieut. EDWARD B. JONES, Jacksonville.

To Boulder, Colo., University of Colorado, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Fort Riley, Lieut. DAVID C. WILLIAMS, Post.

To Camp Bowie, Fort Worth, Texas, as member of a board examining the command for tuberculosis, from Fort Riley, Lieut. CHARLES R. GOWEN, Carlsbad.

To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. WILLIAM E. RAMSEY, Houston.

To Camp Doniphan, Fort Sill, Okla., for duty, Capt. WILLIAM D. CURRAN, Waco.

To Camp Logan, Houston, Texas, for duty, Capt. FRANK G. PARKHILL, Houston.

To Camp MacArthur, Waco, Texas, for duty, Lieut. CHARLES W. CASTNER, Terrell.

To Fort Oglethorpe for instruction, Lieuts. THOMAS B. BOND, Fort Worth; JOSEPH E. McDONALD, San Antonio; GROVER C. FOX, Tell.

To Fort Riley for instruction, Major FREDERICK J. COMBE, San Antonio.

To Fort Sam Houston, Texas, for duty, Lieuts. JOSEPH E. JONES, Boyce; GEORGE S. BEATY, Guadalupe; CLARENCE R. MYRICK, Uvalde.

To report by wire to the commanding general, Southern Department, for assignment to duty, Lieut. FRED H. HODDE, Burton; from Camp Baker, Lieut. ALBERT A. JACKSON, Mexia.

To the inactive list, Major WALLACE RALSTON, Houston.

Utah

The following order has been revoked: *To Boston, Mass.*, Harvard Medical School, for instruction, from Fort Riley, Lieut. CHARLES E. BRAIN, Salt Lake City.

Vermont

To Army Medical School for instruction, Lieut. SIDNEY MITCHELL, Jr., Richmond.

To Camp Sevier, Greenville, S. C., for duty, Capt. GEORGE H. NEWTON, Cambridge.

To Fort Oglethorpe for instruction, Major HARRY T. SUMMERSGILL, Bennington.

Virginia

To Army Medical School for instructions, Lieut. JOSEPH J. LIGON, Lynchburg.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. SETH B. PERRY, Hopewell; from Army Medical School, Lieut. HARTWELL G. STONEHAM, Waverly.

To Camp Wheeler, Macon, Ga., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Major ALLEN J. BLACK, Hollis.

To Fort Oglethorpe for instruction, Lieut. ROSCOE F. THORNHILL, Slate Mills, Va.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School* for duty, Lieut. CORNELIUS B. COURTNEY, Fairfax.

To Saltville, Va., for duty, Capt. CHARLES F. UPDIKE, Browntown.

The following order has been revoked: *To Camp Lee*, Petersburg, Va., from Camp Pike, Lieut. JOHN O. BOYD, Roanoke.

Washington

To Camp Bowie, Fort Worth, Texas, as member of a board examining the command for tuberculosis, from Fort Riley, Lieut. JAMES B. COUCHE, Twisp.

To Camp Fremont, Palo Alto, Calif., base hospital, from Camp Lewis, Capt. ERNEST L. BICKFORD, Seattle.

To Camp Lewis, American Lake, Wash., for duty, Lieuts. VICTOR PIRO, Cle Elum; WILLIAM W. BRAND, Rosalia.

To Fort Riley for instruction, Capts. CLINE F. DAVIDSON, HARRY H. HEWITT, Seattle.

To report by wire to the commanding general, Western Department, for assignment to duty, Lieuts. LAWRENCE HOPKINSON, Aberdeen; CHARLES E. MONTGOMERY, Walla Walla.

To San Francisco, Calif., for instruction, and on completion *to Camp Cody*, Deming, N. M., base hospital, Capt. RICHARD T. BURKE, North Bend. On completion *to Camp Kearny*, Linda Vista, Calif., base hospital, Lieut. BURTON E. FLEMING, McCleary.

West Virginia

To Army Medical School for instructions, Lieut. JOHN E. MILLER, Widen.

To Camp Gordon, Atlanta, Ga., for duty, Capt. CHARLES A. CLEMMER, Weirton.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort McPherson, Lieut WILLIAM P. LEWIS, Beckley.

To Camp Lee, Petersburg, Va., for duty, Capt. JULIAN W. ASHBY, Carbon.

To Camp Sevier, Greenville, S. C., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Lieut CHARLES W. WIEHE, Wheeling.

To Fort Oglethorpe for instruction, Lieut. VICTOR L. GLOVER, Inwood.

To Hoboken, N. J., for duty, from Fort McPherson, Lieut. WATSON S. ROWAN, Omar.

Wisconsin

To Camp Beauregard, Alexandria, La., as member of a board of medical officers for the special examination for tuberculosis, from Fort Oglethorpe, Capt. ANFIN EDGAHL, Menominie.

To Camp Dodge, Des Moines, Iowa, base hospital, Capt. ARTHUR F. LYON CAMPBELL, Florence.

To Camp Lee, Petersburg, Va., for duty, Lieut. RUDOLPH C. PFEIL, Milwaukee.

To Camp Pike, Little Rock, Ark., for duty, Lieut. RICHARD A. DREYER, Wheeler.

To Camp Shelby, Hattiesburg, Miss., as assistant to camp surgeon, from West Point, N. Y., Lieut. ARTHUR D. SMITH, Gilmanton.

To Cape May, N. J., base hospital, from Camp Pike, Capt. J. GURNEY TAYLOR, Milwaukee.

To College Station, Texas, for duty, from Houston, Capt. HUBERT S. STEENBERG, Milwaukee.

To Fort Riley for instruction, Capts. ARTHUR H. WINTER, Tomah; SYLVESTER R. HUTCHINS, Whitehall.

To Jefferson Barracks, Mo., for temporary duty, and on completion *to his proper station*, from Camp Pike, Lieut. FRANK H. RUSSELL, Neenah.

To Fort Myer, Ga., for duty, Lieut. CLARENCE N. SONNENBURG, Sheboygan.

To report by wire to the commanding general, Central Department, for assignment to duty, Capt. JOHN R. EASTMAN, Kenosha.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

CALIFORNIA

New Officers Elected.—At the forty-seventh annual meeting of the medical society of the state of California, at Del Monte, April 15 to 17, the following officers were elected: president, Dr. Cornelius Van Zwaluwenburg, Riverside; vice presidents, Drs. John H. Graves, San Francisco, and Ferdinand Stabel, Redding; secretary, Dr. Saxton Temple Pope, San Francisco, and delegates to the American Medical Association, Drs. George H. Kress, Los Angeles, Oliver D. Hamlin, Oakland, and Victor G. Vecki, San Francisco. Santa Barbara was selected as the next place of meeting. The association adopted resolutions remitting the dues of members in the military service, and adopted plans for calling on all members of suitable age and otherwise available to tender their services to the government.

Personal.—Capt. Walter O. Howell, San Francisco, on duty at Camp Fremont, fell from a horse, May 23, fracturing his left femur near the hip joint.——Dr. Lewis Michelsen, San Francisco, has been appointed by the San Francisco Board of Health director of the branch office in the Underwood Building, succeeding Dr. Harry G. Irvine.——Dr. Walter Lindley, Los Angeles, who was operated on recently in the California Hospital, is reported convalescent.——Dr. Alfred Guido Rudolph Schlosser, Hollywood, has petitioned the Los Angeles Superior Court to legally change his surname to Castles.——Dr. Howard C. Naffziger has been placed in charge of the division of brain surgery in the Central Reconstruction Hospital, Fort McHenry, Md.——Dr. John W. Hanner has been appointed health officer of Sacramento, succeeding Dr. Gustavus C. Simmons, resigned.——Because of alleged disloyal utterances the New England Society, Oakland, at a recent meeting is said to have voted unanimously for the expulsion of Dr. Heinrich E. Franck from the organization.

COLORADO

Personal.—Dr. J. L. Tadlock, Palisades, has been appointed coroner of Mesa County, succeeding Dr. Arthur G. Taylor, who has entered the military service.——Dr. Edward W. Lazell, Denver, has returned after several months of service in French hospitals.

Licenses Revoked.—At its January meeting, the Colorado State Board of Medical Examiners revoked the license of Dr. Robert Ritchie Walker of Canon City, on the ground that he had been convicted of a crime involving moral turpitude. At its April, 1918, meeting, the board also revoked the license of Dr. Allen R. Ransom of Denver, on the following grounds: For the last seven months of 1917 he had been practicing in Colorado without a license; he had, during the same time, been in the employ of one E. J. Kellihan, who was not licensed to practice medicine in Colorado, and he had practiced as the partner of E. J. Kellihan, with whom he had entered into an agreement promising to divide fees which had been obtained for professional services.

CONNECTICUT

Personal.—After forty years of service, Dr. Charles E. Stanley has resigned as a member of the staff of the Connecticut State Hospital, Middletown, and his resignation is to take effect July 15.——Dr. Thomas F. Keating, Manchester, has recently returned from China where he has been engaged in government sanitary work.

New Home for Society.—The New Haven Medical Society has secured an option on the Townsend property, New Haven, and is raising a fund of $55,000 for the purchase of the property. The house will be used for general headquarters, meetings, and social gatherings, and will contain the library and reading room of the organization. In the near future it is proposed to erect a brick addition to the building as an assembly room.

New State Officers.—At the one hundred and twenty-sixth annual meeting of the Connecticut State Medical Society held in Hartford, May 15 and 16, under the presidency of Dr. Edward K. Root, Hartford, the following officers were elected: president, Dr. Charles J. Bartlett, New Haven; vice presidents, Drs. Frank E. Guild, Windham; James H. Kingman, Middletown; secretary, Dr. John E. Lane, New Haven; treasurer, Dr. Phineas H. Ingalls, Hartford; delegates to the American Medical Association, Drs. D. Chester Brown, Danbury, and John E. Lane, New Haven, and alternates, Drs. Max Mailhouse, New Haven, and Robert L. Rowley, Hartford.

DELAWARE

Honor Veteran Physician.—About fifty physicians of Wilmington gave a complimentary dinner to Dr. Henry J. Stubbs at the Hotel Dupont, April 25, to commemorate his completion of fifty years of active practice.

Personal.—Dr. T. H. Davis, superintendent of the Ferris Industrial School has sent in his resignation, to take effect June 1, and will practice in Wilmington.——Drs. Robert Ellegood and Michael Ostro have been appointed members of the board of health of Wilmington.

State Board Election.—At the annual meeting of the state board of health, held in Wilmington, the following officers were reelected: president, Dr. William P. Orr, Lewes; secretary and registrar, Dr. Abram E. Frantz, Wilmington, and pathologist, Herbert J. Watson, Wilmington.

DISTRICT OF COLUMBIA

"Podiatrists" to Be Licensed in the District of Columbia.—Podiatrists, commonly known as chiropodists and sometimes vulgarly called "corn doctors," can no longer practice their calling in the District of Columbia unrestricted. Congress has just enacted a law forbidding the practice of podiatry in the district except by persons who have passed such examinations concerning their fitness as the health officer of the district may prescribe. The health officer must conduct the required examinations. The law does not prevent licensed physicians from practicing "podiatry," nor podiatrists who have been practicing in the district for not less than one year at the time of the approval of the law. By the law, podiatry is defined as the surgical, medical, or mechanical treatment of any ailment of the human foot, except the amputation of the foot or any of the toes; but the podiatrist may not lawfully use other than local anesthetics.

Medical Society Creates a War Committee.—By resolution adopted May 15, the Medical Society of the District of Columbia constituted its executive committee a war committee. The committee was authorized to send to each active member of the society a questionnaire designed to elicit such information as may be necessary to determine which of the members should perform military service and which should remain at home to care for the civil population. The resolution impresses on the entire membership of the society the duty of responding promptly to the questionnaire, and on those members who may be selected by the war committee for military service, the importance of early applications by them for commissions in the medical service of the Army or the Navy. The entire organization of the society, and its personnel, were by the resolution offered to the American Medical Association to help in the campaign the association has undertaken at the request of the Surgeon-General of the Army and Navy to obtain adequate complements of medical officers for both services.

FLORIDA

Personal.—Horatio M. Parker has been appointed bacteriologist and chemist for the Jacksonville Board of Health.——Stewart G. Thompson, formerly of Kansas City, has taken up his duties as vital statistician of the state board of health.——Dr. Lawrence T. Galphin, Fernandino, has been appointed district health officer of the second district of the state board of health, succeeding Dr. Joseph E. Taylor, resigned.

State Meeting.—At the meeting of the state medical society at Tampa, May 16, the following officers were elected: president, Dr. Frederick J. Walter of Daytona; vice presidents, Drs. William P. Adamson, Tampa; H. Mason Smith, Chattahoochee; acting secretary, to serve during the absence of Dr. Graham E. Henson, Jacksonville, who is serving with the United States forces, Dr. W. H. Coffee, Winter Haven; treasurer and editor of the *Florida State Medical Journal*, Dr. William R. Warren, and delegate to the American Medical Association, Dr. John S. Helms, Tampa. Miami was selected as the next place of meeting.

IDAHO

Personal.—Dr. Susan E. Bruce, city health officer of Lewiston, has been reappointed a member of the state medical board.——Dr. Walter F. Pike, superintendent of the Blackford State Hospital, has resigned.

ILLINOIS

Service Flag Unfurled.—The Auxplaines Medical Society at its annual meeting, April 4, in Oak Park, unfurled a service flag with thirty-one stars.

Tablet to Commemorate First Medical College.—Acting on the advice of the Illinois centennial commission, Morgan County has erected a marker on the site of the first medical college in Illinois.

Personal.—Dr. Charles W. Miller, Peoria, has been appointed special medical health officer for the Camp Herring military zone which embraces the city of Peoria and adjoining townships.——At its annual meeting, May 5, the Illinois Public Health and Welfare Association elected Dr. John A. Robison, Chicago, president, and Drs. Wilbur H. Gilmore, Mount Vernon, and H. Nelson Heflin, Kewanee, vice presidents.

Chicago

Pathologist Wins Prize.—Harry Lee Huber, formerly pathologist in the University of Chicago, was awarded the Ricketts Prize, May 2, on account of his research work to determine new methods of treating tuberculosis. The prize consists of the income of $5,000 and is given in memory of the late Dr. Howard Taylor Ricketts.

College of Medicine of University of Illinois Adopts Quarter System.—The University of Illinois, College of Medicine, announces that beginning with June 3, it will operate on the quadrimester system. In this system there will be three terms of four months each calendar year. The courses will be so arranged that it will be possible for a student to enter the school at the beginning of any one of the three terms.

Personal.—Rollo K. Packard, for the last seven years superintendent of Washington Park Hospital, was given a banquet by fifty-seven of his associates, April 29.——Dr. Homer V. Halbert has been elected president of the Empire State Society of Chicago.——Dr. William H. Burmeister, coroner's physician, has resigned to enter the military service.——Major Kellogg Speed, M. R. C., has been transferred from service with Base Hospital No. 12 to service with the 42d Division of the American expeditionary forces.

IOWA

Personal.—Dr. Walter A. Matthey, Davenport, was operated on at the Augustana Hospital, Chicago, for disease of the gallbladder.——Dr. Eli Grimes has assumed charge of the Des Moines Tuberculosis and Free Public Health Nursing Association.——Dr. Jay Crowley, Rock Rapids, is reported ill with scarlet fever.

New Officers.—At the meeting of the State Society of Iowa Medical Women, held at Fort Dodge, May 7, the following officers were elected: president, Dr. Jeanette F. Throckmorton, Chariton; vice presidents, Drs. Josephine M. W. Rust and Sarah A. Kime, Fort Dodge, and Rosa E. Lowder, Maquoketa; secretary, Dr. Nelle S. Noble, Des Moines, and treasurer, Dr. Jessie B. Hudson, Carroll.

LOUISIANA

Officers Elected.—At the thirty-ninth annual meeting of the Louisiana State Medical Society, held at New Orleans, April 16, 17 and 18, the following officers were elected: president, Dr. Wilkes H. Knolle, New Orleans; vice presidents, Drs. G. M. G. Stafford, Alexandria; Amedee Granger, New Orleans, and Albert E. Fossier, New Orleans, and secretary-treasurer, Dr. Paul T. Talbot, New Orleans. The following were elected as councilors of the respective districts: Drs. Paul J. Gelpi, New Orleans; Beverly W. Smith, Franklin; Joseph E. Knighton, Shreveport; Jesse L. Adams, Monroe; James J. Robert, Baton Rouge; E. M. Ellis, Browley, and Eugene L. Henry, Lecompte.

MARYLAND

Physician Convicted.—Dr. Chauncey T. Scudder, proprietor of a sanatorium at Arlington, is said to have been found guilty of furnishing morphin to an addict in violation of the federal law and to have been sentenced to imprisonment for three months.

Antituberculosis Association Meeting.—At the meeting of the state War-Time Tuberculosis Conference held in Baltimore, April 18, Dr. Henry Barton Jacobs, Baltimore, was elected president, Dr. C. Hampson Jones, vice president, and Drs. John S. Fulton, William T. Howard, Martin F. Sloan, William S. Thayer, Thomas Fell, J. Hall Pleasant, Roland Park, and Allen K. Krause were elected members of the executive committee.

Personal.—Dr. William N. Gassaway of Ellicott City has been appointed chief health officer of Howard County.——Dr. Winford H. Smith, superintendent of the Johns Hopkins Hospital, who has been working in the office of the Surgeon-General of the Army in Washington for the past ten months, has been commissioned a colonel in the medical corps.——An informal reception was given, May 14, in the chapel of Brown Memorial Church to Dr. Mildred Jenks, who will sail this summer for Canton, China. Dr. Jenks goes out as the representative of the Women's Missionary Society of Brown Memorial Church and will be resident physician at the David Gregg Hospital for Women and Children in Canton.——Dr. Stanley Mitchell has been appointed medical superintendent of the Franklin Square Hospital, succeeding Dr. W. Todd Turnehough, resigned to become chief surgeon of the Dupont Mills, Parrin, N. J.

MASSACHUSETTS

Free School on Public Health.—A free school on public health with sessions, May 28, 29, 30 and 31, has been arranged for by the committee on public health of the Massachusetts Medical Society in cooperation with the state and federal public health organizations. Among the subjects for discussion are water and sewage, public health laboratory, public health reports, specific diseases, industrial hygiene, child welfare and public health administration. On the evening of May 30 in Boston, Dr. W. W. Peters will lecture on "Public Health Education in China." Some of the best known men in public health work will address the various sessions.

Personal.—Dr. Richard C. Cabot, Boston, now in France as a member of Base Hospital Unit No. 6, has been made a full professor in Harvard University.——Dr. Edwin A. Locke has been appointed assistant professor of medicine in Harvard Medical School.——Dr. Algernon Coolidge has been appointed acting dean of the Harvard Graduate School of Medicine, succeeding Dr. Alexander S. Begg, Boston, now on duty with the U. S. Army.——Drs. Kallman M. Davidson, Albert Ehrenfried and Harry Linenthal, Boston, and Louis M. Friedman, New York, have been appointed the executive committee of the reorganized medical board of the Beth Israel Hospital, Boston.——Dr. Louis Lazarus, Worcester, was seriously injured in an automobile accident, April 21.

Secretaries for Physicians.—Following an inquiry among physicians as to the desirability of establishing a course for the special training of secretaries for physicians, Simmons College adopted a course of training for that purpose and in June the first class will complete the course. The course includes technical secretarial work, such as stenography, typewriting, filing, cataloguing and bookkeeping, and in addition, familiarity with the medical vocabulary, some language training and abstracting, courses in general chemistry, bacteriology and applied routine medical laboratory work. It is believed that these secretarial technicians will prove useful to hospitals, clinics and specialists who may have certain routine laboratory work, such as urine and blood analysis, culturing, and microscopic examination of pathologic specimens.

Meeting of Examining Physicians.—At the meeting of the Massachusetts Society of Examining Physicians at Lynn, April 26, the society voted to oppose the bill in the state senate which proposes to give the reeducation and rehabilitation of injured industrial workers to the state board of education. It was the sense of the society that such power should be conferred on the industrial accident board. The society elected the following officers: president, Dr. Frank E. Schubmehl, Lynn; vice presidents, Drs. Herbert H. Howard, Boston; Charles S. Benson, Haverhill; John E. McCartin, Boston; secretary, Dr. James H. Stevens; treasurer, Dr. John S. Phelps, and councilors, Drs. Frederick J. Cotton, Boston; Jonathan F. Edgerly, Lincoln; William P. Coues, Boston; Francis J. Hanley, Whitman, and Robert C. Gwin, Boston.

MINNESOTA

Ohage Resigns.—Dr. Justus Ohage, health officer of St. Paul for twelve years, resigned, April 19, after a hearing in the mayor's office, in which he refuted charges of disloyalty that had been brought against him.

MISSOURI

Conference on Military Medicine.—Under the auspices of the St. Louis Medical Society, the medical officers at Jefferson Barracks and the deans of the Washington and St. Louis Universities, a clinical conference on military medicine will be held in St. Louis, June 5, 6 and 7, with headquarters at the building of the St. Louis Medical Society, 3525 Pine Street. On the first day, the members will be escorted to Jefferson Barracks, where the surgeons will arrange for a general inspection of the post, drills, demonstrations at the examination barracks, and lectures on sanitation and infectious diseases. On the following days, clinical programs and lectures have been arranged at the Washington and St. Louis universities and at various city institutions. The object of the meeting is the immediate enrolment of physicians in the Medical Reserve Corps of the Army. Those expecting to attend are requested, at the earliest possible date, to notify the president of the St. Louis Medical Society, 3523 Pine Street, St. Louis.

NEW YORK

For Protection of Watershed.—Governor Whitman has signed the bill passed in the legislature for the protection of the Croton watershed from which the water supply of New York City is derived. This bill aims to prevent pollution of the watershed by state institutions which are to be established in the water collecting area. The sites for the New York State Training School for Boys and the Mohansic State Hospital, Yorktown, will be located elsewhere.

New York City

New Traffic Rule for Physicians.—The first of several new traffic rules which Deputy Commissioner John A. Harris is planning to put into effect this month became operative, May 15. This ordinance authorizes the issuing of special cards to physicians, which will permit their motor cars to stand in crowded streets when on urgent medical calls.

Personal.—Dr. Antoine Depage has embarked for this country and expects to arrive at an American port within a few days.——Dr. Alexis Carrel of the Rockefeller Institute has been promoted by the French government to the rank of commander of the legion of honor.——Dr. Benjamin T. Terry has resigned his position as director of the Brooklyn Laboratories of Pathology.

Army Takes Sea-View Hospital.—An agreement was reached, March 15, between Health Commissioner Royal S. Copeland, Mayor Hylan and Lieut.-Cols. Hornsby and Kramer, under which the army will take over Sea-View Hospital, which has been conducted as a home for tuberculosis patients. The government will take possession as soon as the patients can be removed to the city's hospital at Otisville, N. Y., where the Army has agreed to erect additional buildings for the city.

Commissioner Copeland Confers with Federal Health Officials.—A conference was held, May 15, between Dr. Royal S. Copeland, the new health commissioner of New York, and Surg.-Gen. Rupert Blue of the Public Health Service, Acting Surg.-Gen. Col. James W. Furbush of the Army, and Surg.-Gen. William C. Braisted of the Navy, as a result of which the health department has announced its intention of giving its full cooperation to the national health service. The federal authorities have been assured that there will be no lowering of the standards of health conservation in New York. It was distinctly stated by Dr. Copeland that the policy of disorganization, retrenchment and the substitution of talent of lesser efficiency would not be permitted to continue.——Commissioner Copeland has announced the appointment of Dr. S. Dana Hubbard of the department of epidemiology, to take charge of the bureau of public health education temporarily, after May 15, when Dr. Charles F. Bolduan's resignation goes into effect. He has also appointed a committee consisting of Dr. Louis I. Harris, head of the bureau of preventable diseases; Dr. Alonzo Blauvelt, assistant sanitary superintendent, and Dr. B. Franklin Knause, Brooklyn, deputy health commissioner, to investigate and report on the handling of industrial sanitation in the health department itself.

NORTH CAROLINA

Personal.—Dr. Albert Houck, for ten years assistant physician to the Morganton State Hospital, has resigned. The cause of his resignation is said to be his pro-German sympathies and utterances.

Hospital has New Home.—The Presbyterian Hospital, Charlotte, has moved from its old buildings in the business portion of the city to its new home which is located in a 20-acre oak grove. The hospital has seventy private rooms and is thoroughly equipped.

OHIO

Training for Speech Correction.—It is announced that, during the next year, Cleveland will spend $10,000 to install in its public school system instruction in the correction of defects in speech.

Licenses Revoked.—At a meeting held April 2, the Ohio State Medical Board revoked the licenses of Drs. Robert Austin Browne and Frank Llewellyn Bowsher, both of Akron, for extravagantly worded and dishonest newspaper advertising. May 6, for a similar reason, the board also revoked the license of Dr. Franklin Stuart Temple, formerly of Toledo. Dr. Browne had advertised "quick results" for "weak, worn-out men," Dr. Bowsher had advertised himself as "Akron's reliable specialist," and Dr. Temple was proclaiming himself as a magnetic healer and had conducted a public clinic in the opera house at Lorain. Action was taken under the law which makes it illegal for a licensed practitioner to issue advertisements intended, or having a tendency, to deceive and defraud the public.

PENNSYLVANIA

Personal.—Dr. Samuel H. Ensminger, York, who has been ill in Philadelphia with an infection of the arm, has returned convalescent.——Dr. Thomas A. Taylor, Pomeroy, who has been seriously ill, has recovered.——Dr. John A. Fell has been reappointed a member of the Doylestown Board of Health for the twenty-fifth consecutive term.——Dr. Jane R. Baker, West Chester, has been appointed a trustee of the state hospital for chronic insane, Wernersville.——Dr. George W. Neff, Masontown, has been elected president of the board of trustees of the Cottage State Hospital.——Dr. Edwin S. Dorworth, Bellefonte, recently suffered a slight cerebral hemorrhage.

Philadelphia

Obstetric Society Meeting.—The fiftieth anniversary of the Philadelphia County Obstetrical Society was celebrated, May 17. The progress of obstetrics was reviewed and the men eminent in this domain of medicine were pointed out. Photographs of the prominent pioneers of obstetrics and gynecology were shown and their achievements were outlined by various speakers. Addresses were made by Drs. Barton Cooke Hirst, president of the society; Edward E. Montgomery, C. E. Githens, George M. Boyd, Richard C. Norris, B. F. Bear and Edward A. Schumann. Among the guests at the anniversary meeting were several members of the American Gynecological Society, which held its annual meeting also in this city, May 16, 17 and 18, inclusive. Dr. George W. Kosmak, New York, editor of the *American Journal of Obstetrics*, reviewed in abstract the early publications of the obstetric society as published in the *Journal*.

CANADA

Decoration for Medical Officer.—Col. Harvey G. Young, St. Mary's, was recently granted the D. S. O. for establishing an advanced post under a heavy barrage fire and successfully evacuating more than 400 wounded men.

Ten Gallons of Liquor Allowed to Physicians.—By a recent amendment to the Ontario temperance act, it is provided that a physician may keep 10 gallons of liquor in his private house, office or dispensary, despite anything to the contrary which may appear in the act.

New Officers.—At the annual meeting of the Niagara District Medical Association held in Niagara Falls, April 29, Dr. William K. Colbeck, Welland, Ont., was elected president; Dr. Charles E. Duggan, St. Davids, Ont., vice president, and Dr. Harry D. Cowper, Welland, Ont., secretary-treasurer.

Health Bulletin Withdrawn.—The Toronto Academy of Medicine, at its last meeting adopted a resolution expressing regret at the withdrawal of the *Health Bulletin*, issued by the department of health of the city of Toronto and expressing its appreciation of the value of the *Bulletin* to the citizens of Toronto.

Medical Officers for Military Districts.—The medical orders for the Toronto military district have been compiled and approved by Col. H. C. Bickford. The orders furnish complete instruction to the military surgeons and explicit rules relative to soldiers sick while on pass or furlough. Lieut.-Col. Edward S. Ryerson, Toronto, is director of military service; Lieut.-Col. Charles Carter, Hamilton, Ont., is in command of the hospitals; Major G. S. Fowlkes is in charge of the administration of medical service; Capt. S. J. H. Maywood is in charge of medical practice, and Lieut.-Col. John W. S. McCullough is in charge of sanitary work.

Hospital News.—A hospital is to be built in Halifax, N. S., for the American Red Cross. It will be for soldiers and sailors of the United States who may become ill in that port or who may be brought there needing treatment. It will be situated near the Nova Scotia Hospital.——The St. Thomas (Ontario) Medical Association have asked the board of governors of the Amasa Wood Hospital of that city to take the institution out of the hands of the city council, place it in trust, and have its capacity increased.——The board of governors of Notre Dame Hospital, Montreal, intend to build a million-dollar hospital. Construction will be begun before the end of the war.——The Montreal Presbyterian College and the David Morrice Convocation Hall in connection therewith have been handed over to the military for the purposes of a hospital for returned soldiers.

Personal.—Major Kenneth McCormack, C. A. M. C., has had conferred on him the D. S. O.——Capt. Dimrock Stanley Cassidy, R. A. M. C., Winnipeg, is the recipient of the Military Cross.——Lieut.-Col. Robert M. Simpson, Winnipeg, assistant director of medicals, after returning to France, has been gazetted colonel.——Major John E. Coulter, M.D., has been made president of a traveling medical board in England.——Capt. Freer Richardson, of the Canadian Medical Service, London, England, who was in Bagdad in charge of the army hospital, has been transferred to Mesopotamia.——Capt. D. M. Warren resigned recently from the R. A. M. C. and has been granted a commission in the C. A. M. C., and appointed to the King's Red Cross Hospital, Bushey Park, England.——Capt. Donald G. McKay, C. A. M. C., Bradford, Ont., who was gassed while serving in the trenches, has returned to Canada.——Capt. Cleveland Roy Wilson, Toronto, on the staff of the hospital for sick children, is on his way to the front.——Majors J. Cameron Wilson, London, Ont.; G. C.

Halle and John G. Hunt, Fort William, are returning to Canada. Major Hunt has served with the Russian army in Russia and Roumania.——Surg.-Gen. Henry M. Featherstone, of the Anzacs, is visiting in Ontario, on a tour of the military hospitals, to gain information on the best methods of handling the returned soldier problem so as to apply them in Australia.

GENERAL

Climatologists Meet.—The thirty-fifth annual meeting of the American Climatological and Clinical Association will be held in Boston, June 5 and 6, under the presidency of Capt. J. Elliott, C. A. M. C., Toronto, Ont. The session of the association will be held at the Boston Medical Library, the Fenway.

Coming Meetings.—The American Public Health Association will hold its next meeting in Chicago, from October 14 to 17, inclusive. The principal topic of the meeting will be "The Health of the Civil Population in War Time."——The National Tuberculosis Association, under its new name, will meet in Boston, June 6, 7 and 8. The headquarters will be at the Copley-Plaza Hotel.

More Nurses for the Navy.—The Committee on Public Information, division on woman's war work, issues the following: The Nursing Corps of the United States Navy is cooperating with the Red Cross in its drive to increase the enrolment of nurses. Secretary Daniels appeals to the women of the country to aid this branch of national defense by offering their services and taking advantage of the facilities for training offered during the summer by the Vassar Training School for Nurses.

Teaching Fellowships Available.—It is announced that a number of teaching fellowships in pediatrics are open to students in the University of Minnesota Graduate School, to which a stipend of $500 for the first year is attached, the amount being increased later. Men above the draft age will be taken, and a splendid opportunity is afforded to men who wish to make a specialty of pediatrics. Further information about these fellowships may be obtained from Dr. Julius P. Sedgwick, head of the department of pediatrics, University of Minnesota.

Conference of Public Health Officials to Be Held in Washington.—The annual joint conference of the United States Public Health Service with state and territorial health officers, will be held in Washington, June 3 and 4. The sanitation of extracantonment areas will be one of the chief subjects on the program. Reports will be made as to the success of the cooperative arrangement developed during the past year for preventing the interchange of disease between civil and military populations. Among the subjects to be discussed are the relation to public health of industrial hygiene and sanitation, especially in war industries; the care of the health of tuberculous soldiers on their return to civil life; the use of records of drafted men for public health purposes; effects on the public health of the forthcoming shortage in the medical profession. Among the subjects not so closely related to the war are: the securing of better morbidity reports, and the question of pure water supplies for railroads. There will be reports of standing committees in regard to many of the subjects outlined above and in regard to the sanitation of public conveyances, rural sanitation, and increasing the efficiency of the conferences. The sessions will constitute the sixteenth annual conference of state and territorial health authorities with the United States Public Health Service.

FOREIGN

Asylum for Orphans of Physicians in Spain.—About a year ago the authorities in Spain decreed the foundation of an orphan asylum for orphans of physicians. The plan included the compulsory organization of the profession throughout the country into district *colegios medicos,* and also the use of a stamp to be affixed to all medical certificates, death notices and similar papers to be made out by physicians. The expense of the stamps is to be borne by the patient or his family, except in the case of paupers, for whom special provisions are made. The orphan asylum is to be known officially as the Colegio de huerfanos de la clase medica, or the Colegio del Principe de Asturias. The building for the purpose is nearly completed.

Physicians in the Spanish Parliament.—The *Siglo Medico* expresses regret that so few physicians seek to be nominated to the lower house. With a little effort, the profession could have a strong representation in the Chamber of Deputies, and could influence public health legislation. In the senate, the profession is well represented as there are a number of physicians who are life members, and the ex-ministers are ex-officio members ,while the universities are entitled to elect a representative to the senate, and also the Real Academia de Medicina. The latter has recently selected Dr. L. O. Morejon for this position, and the Universidad Central has elected Dr. A. Espina, one of the editors of the *Revista de Medicina y Cir. Practicas.*

CORRECTION

Chicago News.—Last week, it was stated that Dr. Haim I. Davis had been appointed assistant physician of the county psychopathic and detention hospital. This should have been attending physician.

LONDON LETTER

London, April 30, 1918.

Saving the Wounded in the Retreat

During the German advance in the present offensive, the evacuation of the dressing and clearing stations was a difficult task. They were situated as far forward as Ham, Cagny and Noyon in the Fifth Army area, and at Tincourt, Ytres, Grevillers, and Achiet-le-Grand in the Third Army area. That at Ham fell back to Villers-Carbonnel, but was able to stay there only one day, for already Villers-Carbonnel was under shell fire, and it was obliged to take to the road again to Amiens, and thence again to fall farther back. The hospitals at Cagny and Noyon, owing to the interruption of the railway and roads, could not fall back in the army area, and had to go southward into French territory to the region of Compiègne. By the evening of the first day the hospitals at Tincourt and Ytres were on the move. That at Crevillers was evacuated on the second day. At Achiet-le-Grand, where two hospitals were located on the night of the 21st, shells began falling, and in one eight orderlies were killed and the operating theater was destroyed. The hospitals fell back to Puchevillers, only to be bombed there that night. By the second day, therefore, all the clearing stations were back, or moving, to the second line positions, namely, beside those in the French area, at Roye, Maricourt, Edgehill (near Dernancourt) and Aveluy. None of these places, however, afforded more than a temporary resting place, and again journeys had to be resumed to a series of positions farther back. Every patient from every station was got away. The narrowest escape from losing patients was at Roye, where the hospital stayed on till March 26, and then had to go in a hurry, leaving seventy patients behind, with an officer and twelve orderlies to look after them. Some motor ambulances were met, and urged to go back and make a final effort to get the patients off. They did so, and as the last ambulance left with the last batch of patients it was fired on by the advancing Germans with their rifles. The method of evacuation was, as far as time permitted, extremely orderly and thorough, so that as little as possible was left to the enemy. All stations had nursing sisters on their staffs, and one sister was killed and one wounded. The regular procedure was, however, for the nurses to be moved first on an ambulance or lorry. Then every patient who could walk had to take the road on foot. The severely wounded were loaded on ambulances, and the staff then turned to the work of destruction or salvage before following. The huts in most cases were destroyed, the tents either taken away or burned. All medical stores and appliances, roentgen-ray apparatus, etc., were saved; only some heavy things, such as sterilizing plants, being impossible to move, as well as iron beds and in some cases bedding were left. All surgical instruments were, it is believed, saved, the medical officers in several instances having to put them on wheeled stretchers and trundle them along the roads at night. Some were so worn out with the ceaseless care of wounded and marching that they swayed about the road like drunken men. A clearing station is practically a hospital with from 1,000 to 1,500 beds, and therefore impossible to remove in a few hours; but an organization has been perfected by which a portion constituting a complete unit of 200 beds, with patients, staff and appliances, can be moved immediately on a very small number of lorries. Ahead of the general exodus went this selected portion, which was established and already at work on a new site before the later detachments arrived. So there was a minimum disarrangement in the care of the wounded, and at the end, when all the hospitals finally reached the rearmost positions, the wounded appeared not to have suffered at all, but would have been regarded as good cases, measured by the standard of ordinary batches as they come from the battlefield.

The Treatment of Shell Shock

The large number of men discharged from the army because of shell shock presents a new problem. They have been treated in a long series of military hospitals, where every effort has failed, and finally they have been sent out into the world physically sound but mentally broken down, incapable of work and unfit even to go home to their families. Like many other new problems presented by the war, experience and energy have solved this one. Special hospitals have been established for the treatment of such men with excellent results. The patient is first put to bed in a room alone and the physician brings mental influence to bear on him, for drugs are of little use. He is encouraged to regain his lost will power. The next step is to put him in a room with suitable companions and rouse his interest in things outside himself. At first he is very unsociable because he has lost self confidence; but sooner or later he begins to mix with his fellows and then plays billiards, cards, or other games. In the gymnasium, systematic exercises are then performed under an instructor. Various forms of work, of which carpentry and bootmaking are the most popular, are next undertaken. At first the patients work only an hour in the day, then two, and so on until six hours are attained. Other trades taught are engineering, electric light work, motor construction, and intensive gardening. Two thirds of the patients return to their former work, and one fourth are made useful workers in some other line. Thus complete recovery takes place in eleven out of twelve cases.

Prosecution for Quackery Under the Venereal Diseases Act

For the first time in England, unqualified persons have been prosecuted for quackery. Until the passage recently of the act for the prevention and treatment of venereal diseases, any quack or nostrum vender was at liberty to advertise his claims to treat any disease with impunity. But when the government decided to go to the expense of providing free treatment for venereal diseases, it also decided not to tolerate the competition of quacks, and made it illegal for unqualified persons to profess to treat them, though they still have full play as regards other diseases. James Walker, Harry Key and Fred Waite were convicted before two justices for advertising in a public urinal to treat venereal diseases. A handbill to this effect in the name of the "Curtis Medical Laboratory" of Hill Street, Birmingham, was found affixed to the wall. Waite, who described himself as manager of the company, had his attention drawn to the bill by a police officer. He said that "those things were in the hands of the advertising agents and they had it in their power to carry everything out"; but he declined to give their names. The defendants were convicted, and fines of $250 were imposed. An appeal against the conviction was made and the case came before three judges. The lawyers for the defense contended that there was no evidence that any of the three had committed the offense. The appeal was dismissed.

A Sexual Offenses Bill

Lord Beauchamp has introduced into the House of Lords a sexual offenses bill which makes it an offense punishable by two years' imprisonment for any person suffering from venereal disease in a communicable form to have, to solicit or to invite intercourse with another person, or wilfully to communicate such disease to another person, provided that no one shall be convicted who proves reasonable grounds for believing that he or she was free from communicable disease at the time. To ascertain whether any person, convicted of any offense, which under this clause would be caused or aggravated by the existence of communicable venereal disease, is in fact so suffering, the court may order the offender to submit to medical examination. If the offender is a female she can elect to be examined by a woman physician. False accusations are punishable by heavy fines or imprisonment. Clause 2 forbids prostitutes and night walkers to loiter in thoroughfares for prostitution or solicitation. Clause 3 stiffens the penalties against brothel keepers and the like. Clause 4 imposes a fine for allowing premises used for public entertainment to be the habitual resort, for whatever purpose, of reputed prostitutes. Another clause forbids the display or transmission of any picture or printed or written matter of an indecent or obscene nature, including any advertisement which relates to venereal disease, nervous debility, or other complaint arising out of or relating to sexual intercourse or which suggests directly or indirectly, either the taking of anything for the purpose of procuring abortion or the use of any premises for an immoral purpose.

PARIS LETTER

Paris, April 18, 1918.

Special Commission for Surveillance of Outcome of Nervous and Mental Disease in Soldiers

Conforming to the plan adopted December, 1917, at the reunion of the chiefs of the centers of neurology and psychiatry and by the Société de neurologie, the undersecretary of state for the Service de Santé militaire has decided on the creation of a special commission for supervision of the results of treatment of nervous and mental disease in soldiers. This commission is charged with the technical control of the neurology and psychiatry centers, and also the solution of medicolegal questions in debatable and rebellious neurologic or psychiatric cases (convalescence, temporary or permanent invaliding, military sanctions, etc.). The committee is called to functionate principally for cases treated in the special centers for functional reeducation and exceptionally for other cases which will be submitted by the undersecretary of state for the Service de Santé militaire. As a rule, the commission will examine on the spot the cases referred to them. The commission is composed of Drs. Achille Souques, médecin des hôpitaux de Paris, Ernest Dupré, professor agrégé à la Faculté de médecine de Paris, et médecin des hôpitaux, Henri Claude, professor agrégé à la Faculté de médecine de Paris et médecin des hôpitaux, and Dr. Froment.

Assignment to Their Home Cities of Physicians in Army Service

As a general rule, mobilized physicians should not be assigned to their home cities. This is merely a matter of justice; it would be unjust if these doctors in military service were stationed in their home town and allowed to continue with their civil practice. This would be greatly to the disadvantage of colleagues mobilized elsewhere. An exception to this rule was, however, made recently in favor of the doctors of the classes of 1887 and 1888 (i. e., those 50 and 51 years of age). However, inasmuch as this privilege has given rise to abuses, the undersecretary of state for the Service de Santé militaire has decided that in order to avoid future abuses: 1. No doctor is to come back to his own city, unless there is a vacancy in his grade. 2. Each assignment shall involve the departure of one physician from the place; no service shall be created, no service shall be divided for the purpose of creating a new post, except when new necessity arises for doing so. 3. Each doctor designated for the civil population of his home town shall be given an unlimited furlough, without pay, unless at the same time he should happen to be in charge of a sanitary formation service or of a *corps de troupe.*

Remuneration for Interns

In conformity with a report made by M. Henri Rousselle, member of the city council, the municipal council of Paris has decided that beginning with January, 1918, and ending with the war, the pay of hospital interns and pharmacists shall be increased by 1,000 francs ($200).

Prize Awarded by the Paris Faculty of Medicine

The council of the Faculté de médecine has decided to award the Chateauvillard prize for 1918 to Dr. E. Velter, the author of a work on war surgery, "Penetrating Wounds of the Head by War Projectiles." Dr. Velter is a former intern of the hospitals of Paris, chief of the laboratory of clinical ophthalmology of the Faculty. This article had already received the Godard prize for 1917 of the Academy of Medicine.

Evening Consultations for Venereal Disease

The municipal council of Paris has decided to institute at l'hôpital Saint Louis a service for evening consultations for venereal diseases. A sum of 20,730 francs has been appropriated for the installation and maintenance of this service for 1918.

Thermometer for the Blind

Many kinds of apparatus may be had which enable the blind to do with their fingers what those who can see do with their eyes. To date, no "digital" thermometer, that can be read with the fingers, has been invented. A number of blind men have entered on the practice of professions in whose pursuit it is necessary to know the exact temperature record. Therefore, the Association Valentin Haüy pour le Bien des aveugles (9, rue Duroc, Paris) has offered a prize of 1,000 francs for the best apparatus which will enable the blind to read temperatures.

Deaths

Capt. Richard Lawrence Jett, M. R. C., U. S. Army, Cleveland; Jefferson Medical College, Philadelphia, 1907; aged 32; formerly a member of the Ohio State Medical Association; a member of the medical staff of the Babies Dispensary and Hospital, Cleveland, was killed in action, April 13. In 1905, he became a member of the British field hospital for Serbia, where he was commended for his bravery during the Serbian retreat, and commissioned captain in the Serbian army; later when the war broke out between America and Germany, he returned to this country and was commissioned a captain in the Medical Reserve Corps, becoming attached to the British expeditionary forces in France; later he was appointed a medical officer of the battalion and had just been cited for three decorations in connection with his work in Serbia.

Died in the Service
IN FRANCE
Capt. Richard L. Jett, M. R. C., U. S. Army, 1886-1918

Isaac Adler, New York City; University of Heidelberg, Germany, 1871; aged 68; formerly a Fellow of the American Medical Association; a member of the Association of American Physicians, the American Gastro-Enterological Association, the New York Neurologic Society, the American Association of Pathology and Bacteriology, the New York Pathologic Society, the American Society of Clinical Investigation and the New York Academy of Medicine; professor of clinical pathology at the New York Polyclinic Medical School; consulting physician to the Polyclinic, German, Beth Israel and People's hospitals, and to the Montefiore Home; died at his home, May 4.

Benjamin M. Worsham, El Paso, Texas; University of Louisville Medical Department, 1886; aged 55; a Fellow of the American Medical Association; a member of the El Paso Civil Service Commission; assistant superintendent of the State Lunatic Asylum, Austin; superintendent of the Southwestern Insane Asylum, San Antonio; superintendent and later supervisor of construction of the State Epileptic Colony, at Abilene; died suddenly at his home, May 2, from heart disease.

Died in the Service
IN FRANCE
Lieut. John D. Arnett, M. R. C., U. S. Army, 1889-1918
(*See The Journal, May 18, p. 1484*)

Capt. Henry Clement Welker, M. R. C., U. S. Army, Norristown, Pa.; University of Pennsylvania, Medical Department, Philadelphia, 1906; aged 38; formerly a Fellow of the American Medical Association; formerly director of the roentgen-ray laboratory at the Episcopal Hospital, Philadelphia; on duty with Base Hospital Unit 34, of the Episcopal Hospital; was brought home, ill, from France, to Washington, D. C., and died at the Government General Hospital, May 1.

Capt. Richard C. Hill, M. R. C., U. S. Army, Irondale, Wash.; Cincinnati College of Medicine and Surgery, Cincinnati, 1892; Medical Faculty of McGill University, Montreal, 1906; aged 50; a member of the Royal College of Surgeons, England, in 1906; a member of the Washington State Medical Association; died, April 18, following an operation.

Major Thomas Connally Cowan, C. A. M. C., London, Ont.; Trinity Medical College, 1883; University of Toronto Medical Department, 1892; formerly president of the medical board of the London mobilization center; he was active in military work and former commanding officer of the 15th Field Ambulance; died at his home, May 5.

Capt. Albert Leslie Grubb, M. R. C., U. S. Army, Berkeley Springs, W. Va.; Barnes Medical College, St. Louis, 1903; aged 37; a Fellow of the American Medical Association; died, March 30, from acute dilatation of the heart, while aboard an Atlantic liner, en route to France, with a contingent of American soldiers.

Walter E. Reily, Fulton, Mo.; Homeopathic Medical College of Missouri, St. Louis, 1896; aged 47; a member of the Missouri Institute of Homeopathy, American Institute of Homeopathy; a member of the American College of Surgeons; died at his home, about May 2, from pneumonia.

Henry Merryman Wilson, Baltimore; University of Maryland, Baltimore, 1850; aged 89; a Fellow of the American Medical Association; formerly served as president and secretary of the Medical and Chirurgical Faculty of Maryland; died at his home, May 8, from senile debility.

Lieut. John Raymond Wood, M. R. C., U. S. Army, Hallock, Minn.; Hahnemann Medical College and Hospital, Chicago, 1911; aged 30; a Fellow of the American Medical Association; died, February 3, from pneumonia, at the base hospital, Fort Sam Houston, Texas, where he had been on duty.

Henry Normanton Chapman, St. Louis; Missouri Medical College, St. Louis, 1893; aged 51; a Fellow of the American Medical Association; a member of the St. Louis Pediatric Society; formerly a member of the St. Louis Board of Health; died at his home, April 25, from heart disease.

Simen Menno Yutzy, Ann Arbor, Mich.; University of Michigan School of Medicine, Ann Arbor, 1891; aged 61; instructor in osteology and demonstrator of anatomy in the University of Michigan; a specialist in diseases of the ear, nose and throat; died at his home, May 3.

Gustav Adolph Heidner, West Bend, Wis.; Rush Medical College, Chicago, 1888; aged 54; a member of the State Medical Society of Wisconsin; a charter member of the Wisconsin Surgical Society; founder of the Heidner Hospital, West Bend; died at Long Beach, Calif., May 3.

Addison Fitzhugh Sanders, Cincinnati; Miami Medical College, Cincinnati, 1898; aged 52; a Fellow of the American Medical Association; a member of the American Academy of Ophthalmology and Oto-Laryngology; was instantly killed, May 5, by being struck by an automobile.

Thomas Hollingsworth Andrews, Philadelphia; Jefferson Medical College, Philadelphia, 1864; aged 74; a veteran of the Civil War; surgeon to the outpatient department of the Pennsylvania and Howard hospitals, Philadelphia; died at his home, May 8.

William O. Ensign, Rutland, Ill.; Wooster Medical College, Cleveland, 1869; aged 76; a Fellow of the American Medical Association; a member of the American Association of Railway Surgeons; a veteran of the Civil War; died at his home, May 8.

Rowland A. Postle, Ashville, Ohio; Medical College of Ohio, University of Cincinnati, 1884; aged 59; formerly a Fellow of the American Medical Association; died at the Hawkes Hospital, Columbus, Ohio, April 30, following an operation.

Charles Ogden Cartwright, Sacramento, Calif.; University of Michigan Medical School, Ann Arbor, 1889; aged 58; a member of the Medical Society of the State of California; died at the Krull Hospital, Sacramento, May 2, from paralysis.

David Gilbert Yates, New York City; New York University Medical Department, 1898; aged 47; a Fellow of the American Medical Association; a member of the American

Laryngological, Rhinological and Otological Society; a member of the New York Academy of Medicine; died at his home, May 9.

William Lewis Brosius, Gallatin, Mo.; Missouri Medical College, 1890; aged 64; a Fellow of the American Medical Association; a member of the American Roentgen Ray Society; formerly health officer of Daviess County; died in his office, April 18, from neuralgia of the heart.

George W. Bliss, Valley Springs, S. D., Hamlin University, Medical Department, Minneapolis, 1895; aged 49; a Fellow of the American Medical Association; for many years president of the school board; died at the Luverne Hospital, Luverne, Minn., April 29, from pneumonia.

Major John Henry Ratz, Preston, Ont.; University of Toronto, Faculty of Medicine, 1895; aged 48; was chief of the medical staff of the board of pension commissioners; formerly with Canadian Expeditionary Forces; died at his home, February 11, from myocarditis.

William Henry Manser, Burden, Kan.; Medical College of Ohio, University of Cincinnati, 1884; Kansas City Medical College, Kansas City, Mo., 1889; aged 59; a Fellow of the American Medical Association; died in St. Mary's Hospital, Winifred, Kan., April 23.

James Rundlet May, Portsmouth, N. H.; Jefferson Medical College, Philadelphia, 1866; aged 76; a retired officer of the United States Navy; he formerly served on the pension board and the school board of Portsmouth; died at his home, April 22.

Charles William Groetsch, New Orleans; Tulane University, Medical Department, 1903; aged 41; formerly a member of the city board of health, and assistant coroner for the parish of Orleans; died in the Touro Infirmary, New Orleans, May 7.

William James Hennessy, Palmyra, N. Y.; Syracuse University, Medical College, 1881; aged 61; a Fellow of the American Medical Association; health officer of Wayne County; died in the Lyons Hospital, Lyons, N. Y., April 27.

John Alexander Vincent, Springfield, Ill.; Eclectic Medical Institute, Cincinnati, 1868; aged 87; once mayor of Springfield; formerly a member of the Illinois General Assembly and of the state board of health; died at his home, May 16.

Reuben Wilson Walters, Chagrin Falls, Ohio; Cleveland Homeopathic Hospital College, 1873; Western Reserve University, Medical Department, 1867; aged 79; a veteran of the Civil War; died at his home, April 19, from pneumonia.

Major John Hastings Bell, M. R. C., U. S. Army, Arkadelphia, Ark.; Beaumont Hospital Medical College, St. Louis, 1892; aged 47; a Fellow of the American Medical Association; died at Fort Sill, Okla., March 4, from erysipelas.

John Chase, Denver; University of Michigan, Medical Department, Ann Arbor, 1881; aged 61; professor of ophthalmology and otology in the University of Colorado School of Medicine; died at his home, May 3, from pneumonia.

George Albert Williams, Brooklyn; New York University, Medical Department, New York City, 1879; aged 63; founder and director of the Bushwick Hospital, Brooklyn; died in that institution, May 11, from pneumonia.

Archibald Campbell, Flushing, N. Y.; Columbia University, College of Physicians and Surgeons, 1871; aged 76; formerly physician at Sanford Hall, Private Asylum, Flushing, N. Y.; died at the home of his brother, May 8.

Henry Dodge Nichols, Douglas, Ariz.; Miami Medical College, Cincinnati, 1897; University of Pennsylvania, Philadelphia, 1898; aged 46; died at the Calumet Hospital, Douglas, April 17, from pneumonia.

Benjamin Prince Earle, Charleston, Ky.; Hospital College of Medical Central University, Louisville, 1889; aged 71; a member of the Indiana State Medical Association; died at his home, May 1, from pneumonia.

Arthur J. Morris, Bloomington, Ill.; Hahnemann Medical College and Hospital, Chicago, 1891; aged 63; a member of the Illinois State Medical Society; died in the Kelso Hospital, Bloomington, April 23.

Thomas Jefferson Patterson, Visalia, Calif., University of California Medical School, 1882; aged 62; a member of the Medical Society of the State of California; died at his home, April 23, from heart disease.

John Andrew Freeman, Crestwood, Ky.; Louisville, Ky., Medical College, 1871; aged 66; a Fellow of the American Medical Association; died at St. Joseph's Infirmary, Louisville, April 26, from uremia.

Samuel D. Allen, Oak Harbor, Ohio; Homeopathic Hospital College, Cleveland, 1885; aged 65; a member of the Ohio State Medical Society; died, March 4, from cardiovascular renal disease.

Richard Llewellyn Stoddard, Rochester, N. Y.; Albany Medical College, 1895; aged 48; formerly a Fellow of the American Medical Association; died in the Lee Hospital, Rochester, April 29.

John A. Stevens, Clinton, N. C.; Jefferson Medical College, Philadelphia, 1883; aged 58; a member of the Medical Society of the State of North Carolina; died at his home, February 12, from nephritis.

Abram S. Wilson, Bristol, Pa.; Jefferson Medical College, 1881; aged 67; a member of the Medical Society of the State of Pennsylvania; died at his home, about April 22, from cerebral hemorrhage.

William P. McNally, Bangor, Me.; McGill University, faculty of medicine, Montreal, 1897; aged 52; a Fellow of the American Medical Association; died at his home, May 1, from pneumonia.

David Rosser, North Yakima, Wash.; Miami Medical College, Cincinnati, 1875; a member of the Washington State Medical Association; died at his home, April 23, aged 71, from paralysis.

Adelbert Dalton Atwood, Brooklyn; University of Buffalo, 1869; aged 68; formerly connected with the Brooklyn Board of Health Service; died at his home, April 28, from cardiac asthma.

James Addison Meriwether, Holcombs Rock, Va.; New York University, New York City, 1882; aged 65; a member of the Medical Society of Virginia; died at his home, April 30.

Lucius A. Walton, St. Louis; Washington University, Medical School, St. Louis, 1863; aged 77; a veteran of the Civil War; died at his home, April 28, from pneumonia.

Philip Pendleton May, Trevilians, Va.; Medical College of Virginia, Richmond, 1869; aged 73; a veteran of the Civil War; died at his home, April 29, from paralysis.

Mason Elias Henry, Pine Bluff, Ark.; Vanderbilt University, Medical Department, Nashville, 1912; aged 32; died at the home of his sister, Pine Bluff, La., April 26.

Henry Montgomery, Ypsilanti, Mich.; Michigan College of Medicine and Surgery, Detroit, 1904; aged 50; died at his home, March 2, from aortic insufficiency.

Uriah R. Shaeffer, Hummelstown, Pa., Jefferson Medical College, 1879; a member of the Medical Society of the State of Pennsylvania; died at his home, April 25.

James R. Hall, Carnesville, Ga.; Atlanta Ga., Medical College, 1892; aged 51; a member of the Medical Association of Georgia; died at his home, April 25.

Charles S. Phillips, Reading, Pa.; Medical-Chirurgical College of Philadelphia, 1895; aged 72; died at his home, April 29, from cerebral hemorrhage.

John W. Carmichael, Atlanta, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1886; aged 68; died at his home, May 2, from paralysis.

Thomas Alexander Brandon, Watford, Ont.; University of Toronto, Ont., faculty of medicine, 1911; aged 32; died at his home, April 27, from pneumonia.

Daniel Liberty Collom, Meadville, Pa.; Jefferson Medical College, 1876; aged 67; formerly a member of the city health board; died at his home, April 28.

Timothy Rose Grow, Lynn, Mass.; Hahnemann Medical College and Hospital, Chicago, 1877; aged 77; died at his home, April 22, from pneumonia.

William O. Bunnell, Wilkes-Barre, Pa.; Eclectic Medical Institute, Cincinnati, 1894; aged 50; died at his home, about April 20, from pneumonia.

George R. Baalith, Pittsburgh; Baltimore Medical College, 1906; aged 40; a Fellow of the American Medical Association; died at his home, March 4.

George Kent Colville, Pleasantville, Ohio; Ohio Medical University, Columbus, 1902; aged 51; died at the Grant Hospital, Columbus, April 23.

Elijah H. Gregg, Muncie, Ind.; American Eclectic Medical College, Cincinnati, 1887; aged 57; died at his home, April 26, from pneumonia.

Thomas Kennedy, Bermudian, Pa.; College of Physicians and Surgeons, Keokuk, 1874; aged 79; died at his home, April 29, from paralysis.

Lawrence Bryant Hathaway, Reinbeck, Iowa; Rush Medical College, Chicago, 1878; aged 64; died at his home, about March 17, from diabetes.

Elmore T. Applegate, Union City, Tenn.; Vanderbilt University, Nashville, 1883; died in Jonesboro, Tenn., April 19, from blood poisoning.

Arthur Joyal, Montreal, Que.; Laval University, Medical Department, 1883; aged 58; died at his home, February 6, from heart disease.

Andrew Allen Brown, Bangor, Me.; Bowdoin Medical School, Portland, Me., 1901; aged 42; died in Avondale, Ariz., about April 29.

John Paul Jackson, Norfolk, Va.; Southern Homeopathic Medical College and Hospital, Baltimore, 1895; died at his home, April 29.

Eli M. Downs, Columbus, Ohio; Starling Medical College, 1864; aged 80; died at his home, April 28, from cerebral hemorrhage.

Frederick Henry Parker, Auburn, N. Y.; New York University, Medical Department, 1881; aged 62; died at his home, recently.

David C. Fay, Ostrander, Ohio; Medical College of Ohio, University of Cincinnati, 1867; aged 74; died at his home, April 20.

John Wesley Shepard, Leoti, Kan.; Medical-Chirurgical College of Kansas City, 1904; died in a local hospital, April 25.

John A. Brown, Columbus, Miss. (license, Mississippi, years of practice); aged 80; died at the Columbus Hospital, April 25.

John Elmore Curtis, Waldron, Ind.; Kentucky School of Medicine, Louisville, 1888; died at a hospital in Indianapolis, April 28.

Simon H. Gump, Bedford, Pa.; University of Pennsylvania, Philadelphia, 1870; aged 71; died at his home, April 27.

Marriages

Major Giles Burneston Cook, M. R. C., U. S. Army, Richmond, Va., on duty at Camp McClellan, Anniston, Ala., to Miss Olive Smith, at Washington, D. C., April 30.

Lieut. Robert Douglas Spencer, M. R. C., U. S. Army, Philadelphia, to Miss Julia C. Butler of Hazelton, Pa., at Elizabeth, N. J., May 2.

Hunter Reece Mann of Mardela Springs, Md., to Miss Constance Agnes Vandergrift of Charleston, W. Va., in Baltimore, April 28.

Lieut. Walter Magruder Leonard, M. R. C., U. S. Army, to Miss Ruth A. Ralston, R.N., both of Fosterio, Ohio, April 17.

Lieut. John Edward Rueth, M. R. C., U. S. Army, Sun Prairie, Wis., to Miss Beatrice Miars of Milwaukee, May 7.

William Krauss of Memphis, Tenn., to Miss Margaret V. Curdy, formerly of Philadelphia, at Memphis, April 13.

Capt. Clifton Rodgers Dudley, M. R. C., U. S. Army, to Miss Margaret Gleason, both of St. Louis, May 1.

Brice Worthington Goldborough to Miss Margaret Craig Bayly, both of Cambridge, Md., May 8.

George Washington Guerinot to Miss Ursula M. O'Grady, both of Rochester, N. Y., April 10.

Charles Francis King of McKeesport, Pa., to Miss Corinn Smith of Philadelphia, May 8.

Max Tischler, to Miss Helen Micholosky, both of Wilkes-Barre, Pa., April 30.

Victoria McLaren Moore to Lewis Earle Barnes, both of Chicago, May 13.

Arley Glenn Everhart to Miss Emma J. Radtke, both of Chicago, May 11.

John W. Faust to Mrs. Zora Ray, both of Searcy, Ark., about April 23.

Paul H. Rupp to Miss Clarice Engh, both of Milwaukee, April 18.

Herman Horn, to Miss Lillian Kanes, both of New York, April 28.

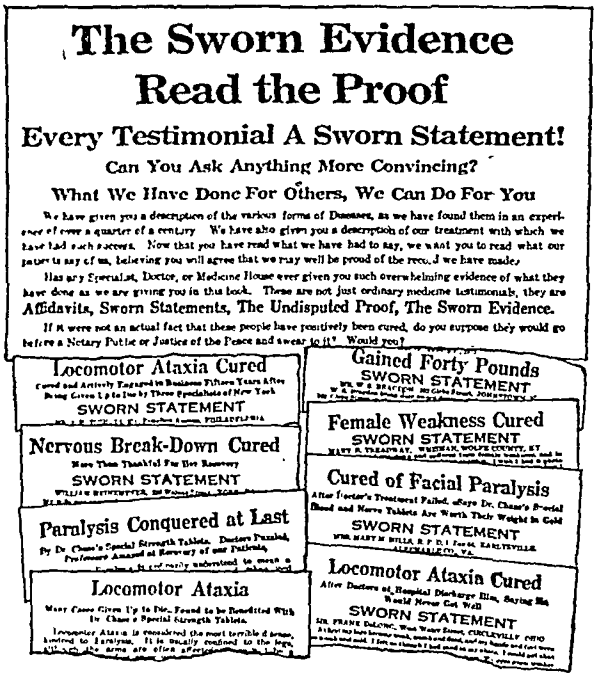
The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

THE DR. CHASE COMPANY

A Fraud Order Closes the Mails to a Nostrum Concern

For many years one Kossuth E. Hafer of Philadelphia has been defrauding the sick by selling alleged cures for paralysis, locomotor ataxia, kidney disease and numerous other conditions. Hafer conducted his business under the trade name "The Dr. Chase Company." He sold three remedies—pills—which, before the Food and Drugs Act made lying on the label irksome if not expensive, were known, respectively, as "Dr. Chase's Blood and Nerve Food," "Dr. Chase's Kidney Food" and "Dr. Chase's Liver Food." As none of these pills could by the widest stretch of imagination be called a "food," the names were changed, after the "Pure Food Law" went into effect, from "food" to "tablets." In those halcyon days for nostrum makers when everything "went" and the advertising pages of the majority of publications were open to any advertiser who could pay for space, the Chase concern advertised in some magazines of comparative respectability. During the past few years, however, the advertisements seem to have been largely confined to those cheap weeklies and monthlies whose advertising income is mainly derived from the less reputable products of the advertising world.



The Sworn Evidence
Read the Proof
Every Testimonial A Sworn Statement!
Can You Ask Anything More Convincing?
What We Have Done For Others, We Can Do For You

We have given you a description of the various forms of Diseases, as we have found them in an experience of over a quarter of a century. We have also given you a description of our treatment with which we have had such success. Now that you have read what we have had to say, we want you to read what our patients say of us, believing you will agree that we may well be proud of the record we have made.

Has any Specialist, Doctor, or Medicine House ever given you such overwhelming evidence of what they have done as we are giving you in this book. These are not just ordinary medicine testimonials, they are Affidavits, Sworn Statements, The Undisputed Proof, The Sworn Evidence.

If it were not an actual fact that these people have positively been cured, do you suppose they would go before a Notary Public or Justice of the Peace and swear to it? Would you?

Locomotor Ataxia Cured
Cured and Actively Engaged in Business Fifteen Years After Being Given Up to Die by Three Specialists of New York
SWORN STATEMENT

Gained Forty Pounds
SWORN STATEMENT

Nervous Break-Down Cured
More Than Thankful For Her Recovery
SWORN STATEMENT

Female Weakness Cured
SWORN STATEMENT

Cured of Facial Paralysis
After Doctor's Treatment Failed, Says Dr. Chase's Special Blood and Nerve Tablets Are Worth Their Weight in Gold
SWORN STATEMENT

Paralysis Conquered at Last
By Dr. Chase's Special Strength Tablets. Doctors Puzzled, Professors Amazed at Recovery of our Patients

Locomotor Ataxia
Many Cases Given Up to Die, Found to be Benefited With Dr. Chase's Special Strength Tablets.
Locomotor Ataxia is considered the most terrible disease, kindred to Paralysis. It is usually confined to the legs,

Locomotor Ataxia Cured
After Doctors at Hospital Discharge Him, Saying He Would Never Get Well
SWORN STATEMENT

Some pages and parts of pages (reduced) from one of the Hafer booklets. Note the claims that the pills would cure paralysis, locomotor ataxia, etc.

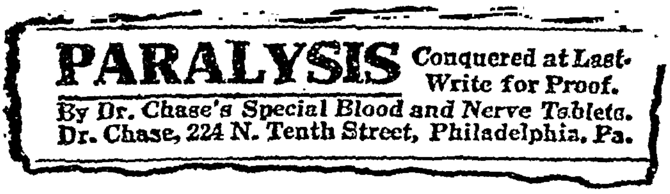
The federal authorities have investigated Hafer's business, and, very naturally, concluded that he has been conducting a scheme for obtaining money by means of false and fraudulent pretenses, representations and promises. Henceforth the mails are closed to the Dr. Chase Company.

In his case with the government Hafer had for his attorney H. B. Thompson, the counsel for the "patent medicine" interests, the "Proprietary Association." It seems fitting that the legal light of the Proprietary Association should have come to the defense of the Dr. Chase Company, which, by the way, seems to have been a member of that organization. The Journal has, before this, called attention to the fact that the membership of the Proprietary Association is secret and that, while it periodically protests that it and its members are *sans peur et sans reproche*, it is careful to prevent a general list of its membership becoming known.

Judge W. H. Lamar, the Solicitor of the Post Office Department, in his memorandum for the Postmaster-General recommending the issuance of a fraud-order, quotes quite fully from the claims made by Hafer in his advertising matter. In brief, it may be said that these claims were to the effect that the Dr. Chase Company had "spent years of time and thousands of dollars in perfecting the prescriptions" of the pills; that the pills had cured many cases of paralysis "of long standing, many of whom were pronounced incurable, given up to die and past the aid of human skill"; that "the Blood and Nerve Tablets" would "build up the blood and nerves faster than any other remedy"; that the "Special Kidney Tablets" would "give strength to the spine . . . stop all wasting of albumen through the urine, neutralize the uric acid, and relieve all rheumatic and sciatic pains"; that the "Liver Tablets" would "put the liver and stomach into such a perfect condition" that it would be impossible for those that took them to have sallow skin, foul breath, coated tongue, sour stomach, drowsiness after meals, constipation, etc.

In 1916 a Post Office Inspector interviewed Hafer and following this interview Hafer eliminated the word "paralysis" from the booklets he sent out (although he continued using it in his magazine advertisements) and substituted the phrase, "loss of power and strength." As Judge Lamar pointed out in his memorandum:

"A number of similar changes have been made with respect to other diseases; the paragraph relating to 'Gravel-Stone in the Bladder' has been omitted and promises of relief, while conveying the same sense, have been made less positive on their face. These changes clearly show the intent of Mr. Hafer to conduct this fraudulent business while evading, if possible, the consequences of his infraction of the law. In his attempt to do this he has not hesitated to change the language of the affidavits reprinted by him in such a manner as to substitute for the names and descriptions of diseases therein other names and descriptions which he thought would pass muster."



PARALYSIS Conquered at Last. Write for Proof.
By Dr. Chase's Special Blood and Nerve Tablets.
Dr. Chase, 224 N. Tenth Street, Philadelphia, Pa.

A typical advertisement. The one reproduced—slightly enlarged—appeared in the *Gentlewoman*, April, 1917. In 1916 Hafer had "hedged" on the use of the word "paralysis" in his advertising booklets—this following an interview with a post-office inspector. Violating the spirit of the law while making a pretense of keeping the letter is typical of the fraudulent "patent medicine" business.

The judge then states that the tablets sold by Hafer were composed of drugs well known to the medical profession and that the evidence demonstrated that these drugs, neither alone nor in combination, had the powers with which Hafer had endowed them. Continuing, the memorandum says:

"The holding forth of these tablets as curative, or even allevial, in all the conditions which may give rise to the symptoms enumerated, regardless of the condition of the patient or the cause of the trouble, is not only unjustified but flagrantly fraudulent. Some of the diseases from which these symptoms arise are incurable, some of them are only amenable to surgery, and many of them make no response whatever to drug treatment. According to the testimony adduced at the hearing in the great majority of these diseases these tablets are of no value whatever.

"Hafer, as might be inferred from the character of his representations, is entirely uneducated along medical lines.

"The business originated in his going to a chemical concern [The Wm. R. Warner Company, it is said.—En.] and having a tonic tablet made up in the business of selling which he intended to engage. He testified that at that time he had no intention of representing these tablets as of value in the various diseases which he included later in his advertising matter. This was done, according to him after persons to whom he had sold these tablets told him, that they had been cured of these various diseases. With no other basis for these claims, and little, if any, knowledge of the therapeutic value of those drugs, he proceeded to build up his claims without recourse to science or to experts along medical lines."

The memorandum further points out that if Hafer had been desirous of conducting his business honestly he would have sought knowledge regarding the value of these tablets from reputable sources of information, for he was put on notice several times as to the questionable character of his representations. He had, in fact, been cited before the Bureau of Chemistry for misbranding his stuff and modified his labels, which came under the purview of the federal Food and Drugs Act, but, as Judge Lamar points out, "at the same time he continued the same fraudulent representations to which his attention had been invited, in his advertising matter."

In 1917 Hafer was indicted for misbranding his preparations, pleaded guilty and was fined $250. "Under the circumstances," says the memorandum, "and in view of the evidence, I am constrained to hold that it was always his intention to go as far as he could in his claims for these tablets without regard to their actual value in the treatment of disease."

In view of all the findings, it was recommended that the Postmaster-General should issue a fraud order against the Dr. Chase Company. The mails were closed to the company, Jan. 17, 1918.

ADVERTISING PRINCIPLES—LAY AND MEDICAL

The Journal has received two letters, one from a physician who had written to the New York *Tribune* protesting against an advertisement of "Aspirin (Bayer)" that appeared in the rotogravure supplement of a Sunday edition and the other the New York *Tribune's* answer to the protest. The two letters make an editorial in themselves. Here is the letter of the physician—Dr. Edwin H. Shepard of Syracuse, N. Y.—which was addressed to the editor of The Journal:

> "When a great daily newspaper takes a stand for honest advertising it seems worthy that acknowledgement should be made. On April 14 the illustrated Sunday supplement of the *New York Tribune*, together with many of the other papers of the country, published a duplicate of the enclosed advertisement of 'Aspirin.' Your own instructive editorial on 'Acetylsalicylic Acid, or What's in a Name?' had appeared in the copy of The Journal of the day preceding.
>
> "Believing in the sincerity of the *Tribune* in its effort for honest advertising, I sent them a copy of your editorial together with the page of advertisement, also calling attention to the statements in the advertisement which seemed questionable. Among the questionable matters in the advertisement were the statements 'The one genuine Aspirin,' 'No other is genuine,' 'That which is genuine possesses qualities of excellence never found in imitations,' for your protection . . . every package and tablet is marked with the Bayer cross,' 'Your guarantee of purity,' and 'Refuse substitutes as they may prove ineffective and harmful.'
>
> "The *Tribune* was requested to investigate into the standing of the Bayer company and its product. A few days later the enclosed letter was received from the paper's Bureau of Investigations."

And here is the New York *Tribune's* answer, signed by R. R. Baer, assistant director of that paper's Bureau of Investigations:

> "We have your letter of April 14th, which was acknowledged on the 22nd, in re Aspirin. For your information: Our rotogravure supplement is printed a number of days in advance of the Sunday paper. When these copies which have already been printed are used, no further Aspirin copy will appear. This means a loss of some four pages."

How many of the numerous medical journals that are still carrying the "Aspirin (Bayer)" advertising would make such a financial sacrifice for mere principle?

Retain the Efficient Health Officer.—A tactful, energetic health officer can control the death rate in his locality provided he is given a few years to do it; but to expect great results in the time he ordinarily holds office is beyond power. —*Public Health* (Mich.).

Correspondence

BÁRÁNY CHAIR TESTS AND FLYING ABILITY

To the Editor:—In the article on "Bárány Chair Tests and Flying Ability" (The Journal, April 13, 1918, p. 1064), Parsons and Segar conclude with the statement that "the evidence, therefore, seems to point to an absence of correlation between equilibrium tests, as established in the Bárány chair, and actual flying ability."

While it is not clear just what impelled the writers to attempt "the correlation study of one hundred naval aviators," the article clearly implies to the medical reader unfamiliar with the principles underlying the tests of the internal ear that the Bárány test was intended to foretell the flying ability of the applicant tested. Just so far as this impression is conveyed by this article, the article is ill advised and untimely. It would naturally be as illogical and unwarranted to deduce that the aviator has no need of normal vision and eye muscle balance, on discovering that certain men who showed inaptitude at learning to fly possessed normal vision and eye muscle balance, as to make similar deduction concerning normal vestibular sense. The authors, in interpreting the examination of the vestibular apparatus as an attempt to determine the applicant's future proficiency under flying tutelage, have first formulated a hypothesis unheard of by the otologist, and then proceeded to prove it completely erroneous. Readers unfamiliar with the fundamental truths of the physiology of the internal ear and with the various methods of testing the vestibular apparatus are impelled to question the truth of teachings and tests in this comparatively new field of scientific medicine, and there is injected into their minds, by so raising doubts as to the soundness of these tests, a disquieting and disturbing element, quite unmerited by the scientific medical men who read to amplify their limited acquaintance with this apparently abstruse subject.

It is not impossible that this correlation study was intended as a psychologic research, in which case it would have been wise to make clear that such was the intention, and to publish it through the medium of a journal, the readers of which are psychologists and hence capable of recognizing psychologic research and placing proper construction on it.

Interest in the study of the vestibular function on the part of those as yet unfamiliar with it is particularly timely in this day of intensive development of great military air service. The general principles of labyrinthology are simple; the anatomic and physiologic details underlying them are somewhat complex; and a clear conception of the meanings of the tests is hardly to be expected to crystallize out of a few weeks or months of its study.

The writers introduce the subject of their article by saying, "Since the Bárány chair has been universally used by both the Army and the Navy in the selection of candidates for aviators," but they fail to state how long it is "since this chair has been used" in their service. This question cannot but be raised in the minds of those familiar with vestibular physiology by the second and third sentences in the article: "We knew, for instance, that trapeze performers and Russian dancers have very little, if any, nystagmus after whirling, and yet their proficiency in their performances depends on their sense of balance. We knew that men who have a so-called 'normal' nystagmus time before flying often lose all or a great part of it after numerous flights." These two statements have no foundation in truth. A scientific man who is familiar with this subject would need no actual tests to convince him of the unsoundness of such statements. However, tests have been made in the past of a large variety of whirling artists, in vaudeville, circus and dancing work, and in every case their responses to the standard stimulation of the vestibular apparatus were normal.

Epidemics of mumps among the flying schools have furnished opportunities of reexamining aviation cadets who had been tested previously, on the occasion of their admission into training, and had been found to have normal reactions to the vestibular stimulation. In some of these mumps cases both the cochlear and the vestibular functions were found to have been impaired seriously by the disease; in others, only the vestibular portion of the internal ear was found to have been affected. Special medical examinations have also furnished instances such as the following:

> An aviator, who had been examined and found to have normal responses to standard vestibular stimulation, and who had a record of months of successful flying on the west front, was finally noted by his flight commander to be flying progressively worse and worse, and experiencing greater and greater difficulties in making landings. At the instance of his flight commander he was sent to Major R. G. for special physical examination, and comparison with his former responses to vestibular stimulation showed a striking diminution in acuity of vestibular perception—from twenty-six seconds to seven seconds duration of nystagmus, and from three past pointings and proper falling to no past pointing and no falling. Further examination revealed syphilitic infection subsequent to his original vestibular tests.

It is not at all impossible that the cases coming to the knowledge of Parsons and Segar in which men having a so-called "normal" nystagmus time before flying lost all or a great part of it after numerous flights, were in reality similar to these just mentioned. It was unfortunate that accurate diagnosis of the cause of the loss in acuity of this special sense apparatus was not made and the details set forth in connection with allusion to the condition. Failing in this, the cases should not have been mentioned. This because, as the statement appears in the article, it is susceptible of only one interpretation, namely, that these men lost part or all of it after numerous flights solely because they had flown, which is plainly controverted by adequate available evidence showing the contrary to be true.

In saying, "it seemed to us, therefore, that for the most part the use of the chair has been taken more or less on faith after the following line of reasoning: A well defined sense of equilibrium is necessary for aviation. The Bárány chair determines the normality or abnormality of function of one's semicircular canals, which have to do with equilibrium. Therefore, by use of the chair, the sense of equilibrium of a candidate for aviation can be established. The question as to whether or not this line of reasoning is theoretically sound we are willing to leave to the otologists for argumentation," the authors make an assumption which is hardly in accord with the facts. One familiar with the work done on the labyrinth recognizes that it is merely a peripheral sense organ which, as Alexander C. Brown stated in 1876, "furnishes information of the change of aspect of the head in space." This normally has definite connections with the central nervous system by way of certain nerve paths and brain centers; the end-organs, nerve paths and brain centers constitute a special system or apparatus, which is commonly known as the vestibular apparatus. The semicircular canals may be determined to be functioning by standard tests, and yet there may exist a lesion preventing the normal operation of the vestibular apparatus.

Prior to the advent of neuro-otology, it would have been in the province of the neurologist alone to determine the location and character of such a lesion; the otologist, however, in dealing with the broad problems arising in the study of the vestibular apparatus, finds himself compelled to overstep the boundaries formerly confining his activities, and to avail himself of the information that otologic neurology places at his disposal.

The relative ability of an individual to utilize effectively the various special informations poured in on the central nervous system from all the special sense end-organs in no way could be conceived as falling within the province of otology or neuro-otology to determine.

It appears from the paper of Parsons and Segar that not all subjects examined have proved to be able to avail themselves of all the incoming special informations with equal facility; but it is not clear how it has been shown that the vestibular findings are specially involved. Until this has been pointed out, the relevance of their article is difficult to conceive.

Further allusion might be made to the incomplete data concerning those constituting the basis of this correlation study, particularly evidenced by the statement "unfortunately, all of these men had presumably passed a satisfactory Bárány examination." But it does not seem justifiable to go further in elaborating the defects so glaringly present both in premise and in development of this article.

E. R. Lewis, M.D.,
Major, M. R. C., U. S. Army.
F. H. Pike, Ph.D.,
New York.

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To the Editor:—When the work of examining candidates for commissions as fliers in the Aviation Section of the Signal Corps began, the ocular requirements were placed at as high a level as possible: to be brief, a pair of perfect eyes was demanded, and that standard has never been lowered. The phrase "a pair of perfect eyes" might be transposed to "a perfect pair of eyes," for not only were the various functions of each eye to be considered with the greatest care, but also the relation of each eye to the other was most completely studied. So stringent were the demands made, especially on the muscular balance, that one of America's best known ophthalmologists expressed the opinion that if they were adhered to there would be no aviators, a rather amusing statement when placed in juxtaposition with some of the recent articles on this subject, the writers of which seem to be hazy as to whether even a demand for two eyes is made.

It was felt that perfect ocular mechanism was none too good when the demands made on it were considered—the start from the ground, the needs of observation, the estimation of distances, the quick recognition of approaching planes, whether friendly or hostile, and as important as any, the landing. During daylight hours, unless enveloped in cloud or fog, of course the eyes play also a very important part in the maintenance of equilibrium: this is realized and admitted by all concerned in the study of the mechanism of equilibrium, and on clear nights the visual impulse is useful in keeping right side up; but on cloudy nights, or when flying in cloud or fog, the aviator may as well be blindfolded for all help he receives from his eyes, and here a normal ear-balancing apparatus is most essential.

The standard of visual acuity was made $^{20}/_{20}$, uncorrected, in each eye, and it was most rigidly adhered to, no waivers being granted for deficiencies in this particular. Where a few seconds' difference in the time of two adversaries starting to maneuver, and where the advantage of position frequently mean the difference between life and death, it was felt that while quick perception and recognition of objects does not entirely lie in keenness of vision, this basic factor must be present in full degree. The near point must be consonant with the age of the candidate, and especial attention was given to this test with the view of eliciting all the information possible concerning the refraction of the eye. At first the refraction of each man was gone over under homatropin cycloplegia on the conclusion of all the other tests; but this was later abandoned, and the refraction was estimated by comparison of the near point, muscle balance and the ophthalmoscope. It was quite obvious that no myopes of over a quarter diopter could make the visual acuity demanded, and it was felt that hyperopia of over 2 diopters was not desirable, owing to the possibility of relaxation of the ciliary muscle under fatigue and the resulting blur of vision.

What limitations of muscular imbalance might be allowed with safety was a question that was most difficult to settle, and at least two alterations were made in the original determination. The maximum hyperphoria to be allowed was placed at 1 degree at the outset, and it was not changed, every one in authority agreeing that a wider deviation in this particular would possibly lead to actual diplopia on fatigue. The horizontal limits were not so easily defined: the final standard was not to allow more than 2 degrees of either exophoria or esophoria without doing prism duction tests, and if the relation between the abduction and adduction was maintained, to pass the man, provided, of course, the deviation was not too high; one over 4 degrees was seldom passed unless the man was especially desirable.

Normal color vision was considered a necessary asset, and was tested with Jenning's color chart; but slight variations in the recognition of extreme shades were considered as negligible, the feeling being that what was required was ability to determine the basic colors, and not all their tones. The visual field was examined only for form, the sensitivity of the retinal periphery for colors not being studied.

A careful examination of the pupil reaction to light, both direct and consensual, and to accommodation was required, and the rotation of the eyeball was studied for both inequality in action and nystagmus. Should the latter be developed within 45 degrees of central fixation, it was absolutely disqualifying. It was felt that some useful knowledge of the condition of the central nervous system might be obtained by these examinations, and great stress was laid on the examiner's being particular in making them. Ocular tension was tested by finger pressure unless there was some special reason for using a tonometer.

Since estimation of distance is one of the great requirements for a skilful pilot, the stereoscopic vision, was examined with great care. A card containing ten small silhouettes was used, and a correct reading of their sequence, by giving the number attached to each, was demanded. Of course, a normal stereoscopic vision will not enable an untrained person to estimate distance in the air with any accuracy, but it will be most helpful to him in attaining this accuracy and will be an essential factor in his making a safe landing.

After all other parts of the ocular examination were concluded, the pupils were dilated and an ophthalmoscopic examination was made.

Such an examination, it will be admitted, when properly made, would exclude all organic conditions that could interfere with the candidate's success as a pilot, and there remained only functional derangements. A most searching inquiry was made as to the candidate's having had attacks of migraine with scotomas or hemianopsia, diplopia or other ocular manifestations of disturbances in cerebral circulation; for not only would such an attack, should it occur in flight, be most disastrous, but such attacks usually indicate a none too stable nervous tone.

It will be admitted, it would seem, that the examination as above outlined tends to be rather searching in its scope and should satisfy even the most exacting critic. To be sure, certain things are not gone into which bring in what may be called the mental elements of vision; but these matters of judgment seem to be concerns rather for the psychologist than for the ophthalmologist.

H. Maxwell Langdon, M.D., Philadelphia.

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To the Editor:—I have watched with much interest the process of determining who are and who are not fit for the aviation service: what makes for and what against, a good aviator.

Unquestionably the aviator must be high in equilibration efficiency, and, no doubt, the semicircular canals have much to do with this, as do also the eyes.

It is my belief, however, that there is a certain something aside from both of these that is very important which we do not grasp at present—a certain sense of direction as well as equilibration, of which some individuals are more possessed than others, and which is susceptible to a high state of cultivation—the sense by which he who possesses it may return from a long ramble in strange forests or mountains and sit down and draw a very true map of the course he has taken; or at the end of his ramble can draw an accurate map of the way back, while another individual traveling with him will have no idea whatever of the direction in which return would be.

This sense of direction is highly developed in the pigeon. May it not be that from those wonderful carriers we can eventually discover the secret of that which makes a good aviator? Is there not possibly an association center controlling this matter of equilibration and direction—a *center for aviation*, so to speak?

Would it not be a good added test of the probable efficiency of an aviation candidate if he were put through some mechanical labyrinth or through by-ways of confusing directions, and then asked to point the way in a direct line to the spot from which he started? I believe that this would bring to light a surprising difference in the ability of different candidates to retain direction memory, or, in other words, to remember *which way is home*, a very important item to the flier in military service.

V. A. Chapman, M.D., Milwaukee.

A NATIONAL PUBLIC HEALTH DAY

To the Editor:—The celebration of Public Health Day in Philadelphia, May 1, 1918, concerning which a news item appeared in The Journal, May 4, excited considerable local interest in the subject of sanitation and the question of improving the national physique. It has been decided more recently by Dr. Krusen, director of public health and charities, to carry on follow-up work in the different sections of the city.

In view of the great importance of physical fitness of the civilian population, especially during the present critical period, I would suggest that a national public health day be celebrated as soon as practicable. In this connection, it is to be recollected that the percentage of rejections among our recruits (29 per cent.) is, sadly enough, too high, and a country-wide, systematic effort should be made to reduce it as rapidly as possible.

In this way a propaganda, having for its object an improvement of our national physical reserve, may be successfully inaugurated. The value of physical fitness will be accentuated through the observance of a national health day. We must not lose sight of the fact that the American race has been slowly and gradually deteriorating physically during the last century. It has been said that if the war is to be won it is to be won by health and certain constructive factors. It follows that among our home defense agencies, an improved national physique easily holds first place.

Moreover, it is vitally important that the civilian population should aim to increase its average man power for national service. There has already taken place a great diminution in the number of producers, because of the fact that many young men have enlisted in the military service and because production, especially farm production has been and must be further increased, not only to feed our own soldiers, sailors and the civilian population, but also to assist in the feeding of our allies abroad.

The recent appointment of physical reserve committees in every community under the auspices of the National Security League will doubtless accomplish good results, if their work is properly planned, since it will tend to upbuild the body, and to that extent improve the health of the general public. It is a matter of common observation by those who have considered the essential factors that enter into hygienic living that muscular activity has been greatly neglected by the average individual; hence a strong movement for the purpose of encouraging physical exercise in this country is both timely and important.

Additionally, however, a practical interest through an enlightened public sentiment, in municipal health rules and regulations, in germ diseases and how to escape them, in personal hygiene and the great economic value of physical fitness, is greatly to be desired.

I feel convinced that a national public health day, properly planned, would stimulate increased interests in, and attention to, the important work of improving the national physique, a matter of vital importance during the present crisis.

The celebration of such a day would mark the beginning of so-called follow-up work throughout the country during the ensuing year. This should consist, among other things, of an extension of the time devoted to personal hygiene, sanitation and preventive medicine in the upper grades of the public schools; also courses in these subjects in our colleges and universities, and a campaign of education in the interests of public health, in which our medical and civic bodies should actively and jointly engage. This follow-up work could be best conducted under the auspices of the American Medical Association, which touches the local profession everywhere. Indeed, the announcement by this leading organization of a national public health day at its forthcoming session would be likely to bear much fruit, particularly if President Wilson could be induced, which is quite probable, to issue a proclamation endorsing the movement.

Surely, the question of physical fitness at this time imposes an obligation on the organized medical profession.

James M. Anders, M.D., Philadelphia.

SERUM DIAGNOSIS OF SYPHILIS

To the Editor:—Referring to the article of Dr. Noguchi (The Journal, April 20, 1918, p. 1157) and his supplementary note (April 27, p. 1252) on the use of sodium acetate in preserving guinea-pig complement for the serum diagnosis of syphilis, I should like to add that while sodium acetate does work very well with many guinea-pig serums, it is not entirely satisfactory with some specimens, owing to a certain amount of precipitation that occurs occasionally. The sharp reactions and rapid hemolysis that tend to take place with complement preserved with the acetate has in my experience during the last six months indicated that in the weaker positive reactions they were more likely to become negative, thereby giving one a misleading result. This so far is the only criticism that I could make regarding the use of sodium acetate for the purpose. I might say that with the ice-box method of preliminary incubation as done by the New York Board of Health, the use of complement preserved by the acetate has proved highly satisfactory, while a check with the same specimens, using the same reagents, has given an end-result that shows either a complete or partial hemolysis except in the strong positive cases.

Referring to the use of the native complement in human serums in making the Wassermann test, I desire to say that there are a certain number of serums that contain sufficient native complement for the test, yet at the same time these serums are more or less anticomplementary in the active state, which property is somewhat increased during the first hour's incubation, tending to produce a false positive result in otherwise negative serums. This particular variety of serum is found sometimes in patients that are jaundiced, and even inactivation does not always destroy the anticomplementary substance. Bile in the blood is likely to cause misleading results, and has already been mentioned in the work of several serologists.

I should like to know if the best procedure in testing those serums that are slightly anticomplementary would not be a careful titration in the active state in addition to inactivation and further tests with increasing amounts of guinea-pig complement. It should be emphasized that many serums are even too anticomplementary after inactivation for dependable results, and the only thing to do is to draw another sample of blood and repeat the test. Where bile is a disturbing element, a calomel purge may produce the desired result. Other conditions may be cleared up by change of diet, etc., as the well known milky serums usually found after a hearty meal. I often encounter the so-called "milky" serums under other conditions, and they are all practically more or less anticomplementary after inactivation.

There is no doubt that the ideal Wassermann test would be a careful titration, using the native complement present, provided the antigens are acetone-insoluble preparations and a careful check is made on each serum for anticomplementary properties. The much heralded Hecht-Weinberg and its various modifications depends for its reputation on the native complement, natural antisheep amboceptor, etc. With this new method as outlined by Dr. Noguchi one can easily get the index by using enough tubes, varying the amounts, etc.

There are many laboratory workers who condemn every new method that appears before a thorough trial, thereby causing the general practitioner to adhere to this or that particular test or modification, because the advertisement says it is the best, without fully understanding the principles involved.

It is, I think, generally conceded by most serologists that both the cholesterinized and the alcoholic (preferably the acetone-soluble) antigens should be used with each specimen tested. This is not being followed by some, and only emphasizes one more reason why we should have a standard technic, at least a standard antigen or a prescribed method for making one; there is as much indication for a standard antigen as there is for a standard unit for diphtheria and tetanus antitoxin, and I hope to see the U. S. Public Health Service adopt a standard antigen if not a standard method.

S. S. Hindman, M.D., Toledo, Ohio.

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To the Editor:—Dr. Hideyo Noguchi, in his article on serum diagnosis of syphilis under war conditions (The Journal, April 20, 1918, p. 1157), mentions that in strongly positive serums complement is fixed wholly in twenty minutes at 21 C., but that on account of weaker reactions the time for fixation should be prolonged to two hours. In recent experiments I have found that complement is completely fixed practically at once at room temperature. The results of a number of special tests indicate that in routine tests it probably is quite sufficient to allow the serum-complement-antigen mixture to stand for ten minutes before adding corpuscles and amboceptor. This seems to be time enough even with weakly positive serums and spinal fluids. As I am unable to make comparative tests on a large scale, I hope that the possibility of shortening the time of the Wassermann reaction in the way indicated may be studied further by others more favorably situated for the purpose.

J. M. Retinger, Chicago.

THE PHARMACIST IN THE ARMY MEDICAL DEPARTMENT

To the Editor:—There seems to be a well defined attitude toward pharmacists in the Army—that of almost completely ignoring their professional distinction, along with an amazing indifference as to their proper place and utilization. Needless to say, such a policy results not only lamentably as regards the pharmacist's status in the Army, but his professional value is lost to the Medical Department.

It is also quite apparent that since modern war machines are essentially and thoroughly businesslike in structure and character, modern methods must be employed to achieve success. It is therefore logical and imperative that every branch and wing of that complex machine be conducted on the modern principle of specialization. The trained man, the specialist, was never more desirable, never more absolutely indispensable. Such a principle is the very backbone of all modern institutions, and invariably spells success. Division of labor and centralized effort are built, supported and owe their existence to the specialist—the trained man.

The pharmacist is a specialist, trained in a part of medical science that cannot be ignored without affecting the efficiency of the Medical Department as a whole. A pharmacist's business ability to buy and distribute should be taken advantage of in medical supply depots. His experience would help to correct mistakes in buying and avoid improper packing for distribution of such supplies. This part cannot be emphasized too strongly, since it would effect an enormous economy hardly ever appreciated by nonprofessionals. Likewise a pharmacist would be invaluable at large base hospitals, and his recognition becomes imperative when the dangers of the improper compounding of prescriptions by nontrained men are fully realized.

Aside from sentimental considerations for the pharmacist as an underpaid, neglected professional, his recognition is dictated by common sense and cannot fail to justify itself from a business and economical standpoint. Never would such a step be more timely, never was it more obvious and desirable. Indicting criticism of the present system of the neglected pharmaceutical branch of the Medical Department could be easily brought to light. The method of packing for distribution could be pointed at as wasteful, which a professional eye could readily detect and condemn. Immense savings could be gained even in the small Army dispensaries were the business end of medical supplies placed in the hands of the logical man—the pharmacist. As for prescriptions, their importance and the skill required for their preparation cannot be overlooked. The idea that a bright private could be taught to perform the few simple operations is not only fallacious but also fraught with dangers.

Perhaps the following incident will serve to illustrate the folly of just such a belief: At an examination for promotion to the grade of sergeant, the aspirant was asked what a "C. C. pill" is. "Any pill containing one cubic centimeter." was his immediate reply. Another applicant was asked how to administer a Seidlitz powder. "Place the powder on the patient's tongue and wash it down with water," was his answer.

Pharmacy is a science—as exacting and important as the science of surgery—and a pharmacist's place should be second only to that of the surgeon. Are civilians more entitled to protection against mistakes of unskilled hands than soldiers?

Albert White, Post Dispensary, Corozal, C. Z.

MODIFIED LAVATORY CHAMBER

To the Editor:—In The Journal, May 18, Dr. Zan D. Klopper of Chicago has an article entitled "The Practicability of the Modification of the Lavatory Chamber." This is not a new idea, as the late Dr. B. Howard Rand, professor of chemistry in Jefferson Medical College, in 1876, drew a diagram similar to Figure 2 in Dr. Klopper's article, on the blackboard before his class. His idea was superior to Dr. Klopper's, as he not only embraced all of the doctor's but he had a cover to the seat with a spring attachment to compel the individual to keep his body bent forward. The idea was not only to aid defecation but to prevent the occurrence of a hernia.

J. B. Potsdamer, M.D., Philadelphia.

[Note.—Dr. Klopper claimed no originality for the theory. The physiologic basis for the position which he described has been understood for many years. He did, however, work the matter out in some detail and presented drawings to enable those interested to design a proper apparatus.—Ed.]

ARSPHENAMIN (SALVARSAN) REACTIONS

To the Editor:—Many have gained the impression that arsphenamin is a severely toxic spirocheticide. I believe that none of the American preparations are as toxic as was the German-made salvarsan. Many physicians have used the American products in our laboratories, and have found the reactions fewer and lighter than were formerly noticed with the German-made salvarsan. These deductions are made from several thousand treatments with the German salvarsan and the American-made salvarsan and arsenobenzol. An unfortunate feature is that many physicians have substituted other forms of antisyphilitic treatment, with the result that the patients do not have such an efficient destruction of spirochetes as they did with the use of salvarsan. When a death or severe reaction follows the use of one of these drugs, it is reported both in the public and in the medical press, but very little is said of the thousands of favorable results.

Occasionally a reaction may occur from other causes than faulty technic. All patients who are to receive an intravenous arsphenamin treatment should have a laxative the night before, should not have any breakfast, and should not eat a full meal the same day that the arsphenamin is administered. Some patients that have taken several intravenous arsphenamin injections without any reactions have had reactions of variable degree following treatment soon after a full meal. Reactions have occurred in a large percentage of patients who have eaten a large meal within six or eight hours after treatment. These reactions come on slowly with headache, nausea, vomiting, diarrhea and a temperature of 102. The symptoms may last two days.

In preparing the solutions we recommend the use of triple distilled water, redistilled through glass, mixing the salvarsan brand of arsphenamin in about 50 c.c. of cold water, never over 100 F., and preferably under that. The solution is neutralized with sodium hydroxid and then filtered through a sterile cotton filter into 100 c.c. of cold redistilled water.

With the arsenobenzol brand of arsphenamin it is necessary to dissolve in hot water; otherwise the technic is the same. Hot water should never be used in preparing the salvarsan brand. With both preparations the intravenous injection should be made within a few minutes after the material is prepared.

H. S. Warren, M.D., Chicago.

THREE DROP METHOD OF DETERMINING HEMOGLOBIN BY THE TALLQVIST SCALE

To the Editor: In working with the Tallqvist hemoglobin scale, I find that by taking three drops of blood about 2 cm. apart, each drop coming under an opening in the scale, one can determine the results of the hemoglobin test much better than by the one drop system, as it affords three scales to read from at once.

R. J. Weidmann,
Takoma Park, D. C.
Corporal, Medical Department, U. S. Army.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BREATH HOLDING IN CHILDHOOD

To the Editor:—Please give cause and treatment for child holding its breath to the point of cyanosis and convulsions, seen most often when crying from anger.

W. T. Potter, M.D., Aurora, N. C.

Answer.—This condition of breath holding, also called inspiratory apnea, is not infrequently observed in early childhood. At first one would be led to think that the condition is a manifestation of spasmophilia or tetany with the associated laryngeal spasm and generalized convulsive seizures. On further investigation, however, this is not confirmed. Breathing is arrested or remains stationary in the midst of the crying attack, but no inspiratory spasm occurs. The child attempts to cry, but the inspiratory muscles remain in a tonic state. He throws himself about, becomes extremely pale and finally cyanotic, the body becomes rigid, the eyes turn or become set, and he loses consciousness momentarily. The attack usually lasts only a few seconds, though it may continue several minutes. In the more severe cases, general convulsions may occur. When the spasm relaxes the child cries, though he resumes normal breathing, and soon acts as though nothing had happened, or falls asleep.

This condition also suggests a possibility of epilepsy, or other organic changes in the central nervous system. It is true that the differentiation of attacks of inspiratory apnea or breath holding from true epilepsy may present great difficulties. Nevertheless, it should be pointed out that the breath-holding attacks follow immediately after severe crying or excitement, while epileptic attacks occur suddenly while the child is at quiet play or even during sleep. Biting the tongue is characteristic of epileptic attacks. Involuntary evacuation of the bladder or bowels may occur in either attack. Prolonged sleep usually follows an epileptic seizure and is characteristic, though in some cases of breath holding, the prostration may be so great that a prolonged sleep, lasting several hours, ensues after the attack.

These attacks of breath holding occur most commonly in the second and third years of life, and disappear about the fifth year, whereas the genuine spasmophilia occurs during the first year or two of life. These occur in neuropathic children and are brought on by fear, anger, fright or some other psychic trauma. The children are irritable and ill tempered. Parents fear the recurrence of the attacks and consequently humor them in every possible way. They permit no one to cross the child, no whim remains ungratified, and the little patient is not helped to offer resistance to the recurring attacks. Patients practically always recover after some time, although the attacks may be severe and protracted. It has been pointed out that children with this disorder who fall ill with an acute infectious disease, or who may happen to need some surgical treatment, may become so severely frightened that a protracted breath-holding attack with general convulsions may be so severe as to terminate fatally.

The treatment should be directed toward the general management of a nervous child. He should be warned not to repeat the attacks. Every form of mental overstimulation should be avoided. Frequently patients improve most rapidly if they are removed from the excitement and tension of home surroundings. A short stay at the hospital away from parents and friends is often advisable. Bromids are advised in addition to psychotherapy. During the attack the child may be sprinkled with cold water or he may be immersed in a cold bath.

NUMBER OF MEDICAL RESERVE OFFICERS NEEDED—SALARIES, EXPENSES AND ALLOWANCES

To the Editor:—Please answer these questions regarding the Medical Reserve Corps of the Army and Navy:

1. How many medical men will be needed after the present enlistment of 5,000?
2. Are there openings in the Navy? How many are needed there, and what salary is paid?
3. What is the cost of a complete officer's equipment in each service?
4. What provision does the government make for dependents of officers in the way of money provision outside of the regular salary?
5. What are the salaries of officers in the Army?
6. I have been told that an officer does not receive pay until in active service, which means to me that after receiving a commission the candidate is sent to one of several places for instruction, paying his own railroad fare and paying his own expenses, his salary starting when he begins duty at one of the several cantonments. Is this correct?

Frederick A. Baker, M.D., Rudyard, Mich.

Answer.—1. The call of the Surgeon-General is for 5,000 additional reserve officers before Jan. 1, 1919, and at least 2.500 additional each year long as the war continues.

2. The Navy will probably require 1,000 additional reserve officers during the next year. The salaries paid are: rank of lieutenant, junior grade, $2,000 per year and $432 allowance for quarters when not furnished by the government; rank of lieutenant, senior grade, $2,400 and allowance for quarters, $576; rank of lieutenant-commander, $3,000 and allowance for quarters, $720. There are also liberal allowances for heat and light, the amount varying according to rank, etc.

3. For the cost of the equipment of a medical officer in the Army, see The Journal, May 18, 1918, p. 1469. When naval officers first report for active service for training they are accredited with a clothing allowance of $50, except in the Volunteer Naval Reserve not on active duty. When on active duty, members of the Volunteer Naval Reserve receive the service pay of their grade and service.

4. The only money provision made by the government for officers with dependents, outside the regular salary, is the allowance for quarters which is as follows: first lieutenant, $36 per month; captain, $48 per month; and major, $60 per month.

5. The salaries of medical officers in the Army are: first lieutenant, $2,000 a year and allowance for quarters, fuel and light; captain, $2,400 a year and allowance for quarters, fuel and light; major, $3,000 a year and allowance for quarters, fuel and light. The allowance for quarters is granted only to those with dependents; the allowance for fuel and light varies according to tables published by the Comptroller's Department.

6. Medical reserve officers of the Army when ordered to active duty to receive instruction, either in training camps or in other courses of instruction, receive pay from the time they first report for duty or for instruction. They also receive traveling expenses to their various stations.

THE DUNFERMLINE SCALE

To the Editor:—Please tell me what the Dunfermline scale is or where I can find information about it. It is mentioned as used by the Bureau of Child Hygiene of the New York City Health Department in a survey of schoolchildren of Manhattan (The Journal, April 27, 1918, p. 1257).

E. C. G.

Answer.—The Dunfermline scale is a scheme for classifying children according to their degree of nutrition. It was devised at the College of Hygiene and Physical Training and School Clinics in Dunfermline, Scotland, founded by the Carnegie United Kingdom Trust. Children are placed in four nutrition grades: (1) superior condition; (2) passable condition; (3) requiring supervision, and (4) requiring medical treatment. In the 2,535 children examined in New York, the first two grades included each approximately one third of the total number, and the remaining third was divided between the other two.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alabama: Montgomery, July 9. Chairman, Dr. S. W. Welch, State Capital, Montgomery.

California: San Francisco, June 25. Sec., Dr. C. B. Pinkham, State Capitol, Sacramento.

Colorado: Denver, July 2. Sec., Dr. D. A. Strickler, 612 Empire Bldg., Denver.

Connecticut: New Haven, July 9-10. Sec. Regular Bd., Dr. Chas. A. Tuttle, 196 York St., New Haven; Sec. Eclectic Bd., Dr. J. E. Hair, 728 State St., Bridgeport; Sec. Homeo. Bd., Dr. E. C. M. Hall, 82 Grand Ave., New Haven.

Delaware: Wilmington, June 18-20. Sec., Dr. H. W. Briggs, Wilmington, Del.

District of Columbia: Washington, July 9-11. Sec., Dr. E. P. Copeland, The Rockingham, Washington.

Florida: (E): Jacksonville, June 10-11. Sec., Dr. G. A. Munch, Tampa.

Georgia: Atlanta and Augusta, May 30-June 1. Sec., Dr. C. T. Nolan, Marietta.

Illinois: Chicago, June 3-7. Mr. F. C. Dodds, Supt. of Registration, Capitol Bldg., Springfield.

Indiana: Indianapolis, July 9-11. Sec., Dr. W. T. Gott, 84 State House, Indianapolis.

Iowa: Iowa City, June 6-8. Sec., Dr. G. H. Sumner, Capitol Bldg., Des Moines.

Kansas: Topeka, June 18-19. Sec., Dr. H. A. Dykes, Lebanon.

Kentucky: Louisville, May 28-30. Sec., Dr. J. N. McCormack, Bowling Green.

Louisiana: New Orleans, June 6-8. Sec., Dr. E. W. Mahler, 730 Audubon Bldg., New Orleans.

Maine: Augusta, July 2-3. Sec., Dr. Frank N. Searle, 776 Congress St., Portland.

Maryland: Baltimore, June 18-22. Sec., Dr. J. McP. Scott, Hagerstown.

Michigan: Ann Arbor, June 11-13. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

Minnesota: Minneapolis, June 4-6. Sec., Dr. T. S. McDávitt, 741 Lowry Bldg., St. Paul.

Nebraska: Lincoln, June 3-5. Sec., Dr. J. J. Hompes, 612 Sec. Mut. Bldg., Lincoln.

New Hampshire: Concord, June 24-25. Sec., Dr. W. T. Crosby, Manchester.

New Jersey: Trenton, June 18-19. Sec., Dr. Alex. MacAlister, Trenton.

North Carolina: Raleigh, June 24-28. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.

North Dakota: Grand Forks, July 2. Sec., Dr. G. M. Williamson, Grand Forks.

Ohio: Columbus, June 4-7. Sec., Dr. H. M. Platter, State House, Columbus.

Oklahoma: Oklahoma City, July 9-10. Sec., Dr. J. J. Williams, Weatherford, Okla.

Oregon: Portland, July 2. Sec., Dr. Herbert S. Nichols, 802 Corbett Bldg., Portland.

Pennsylvania: Philadelphia and Pittsburgh, July 9-13. Sec., Dr. N. C. Schaeffer, State Capital, Harrisburg.

Rhode Island: Providence, July 11. Sec., Dr. B. U. Richards, State House, Providence.

South Carolina: Columbia, June 11. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

South Dakota: Deadwood, July 9. Sec., Dr. P. B. Jenkins, Waubay.

Tennessee: Knoxville, Memphis and Nashville, June 14-15. Sec., Dr. A. B. DeLoach, Exchange Bldg., Memphis.

Texas: Austin, June 18-20. Sec., Dr. M. F. Bettencourt, Mart.

Utah: Salt Lake City, July 1-2. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.

Vermont: Burlington, June 10-12. Sec., Dr. W. Scott Nay, Underhill.

Virginia: Richmond, June 18-21. Sec., Dr. J. W. Preston, Roanoke.

Washington: Tacoma, July 2. Sec., Dr. C. N. Suttner, 415 Old Nat'l Bldg., Spokane.

West Virginia: Wheeling, July 9. Health Com., Dr. S. L. Jepson, Masonic Bldg., Charleston.

Wisconsin: Milwaukee, June 25-27. Sec., Dr. J. M. Dodd, Ashland.

Addenda to State Board Statistics

Table D on pages 1084 and 1085 of The Journal of April 13, 1918, was based on signed reports from the various state licensing boards. New York and New Jersey have since reported that the University of Virginia Department of Medicine, the University of Illinois College of Medicine, and the Hahnemann Medical College of Chicago have been admitted to their registered lists. The secretary of the Kansas State Board of Medical Examiners also had reported that only Class A medical colleges were granted recognition. In a later communication he states that Class B colleges will be recognized until 1922. The medical schools now rated in Class B for which recognition in Kansas has been extended until 1922 are: University of Arkansas Medical Department, Little Rock; College of Physicians and Surgeons, Los Angeles; College of Medical Evangelists, Loma Linda; Loyola University School of Medicine, Chicago; Hahnemann Medical College and Hospital, Chicago; New York Homeopathic Medical College and Flower Hospital, New York; Leonard Medical School, Raleigh; Eclectic Medical College, Cincinnati; Ohio State University College of Homeopathic Medicine, Columbus; Temple University Medical Department, Philadelphia; Meharry Medical College, Nashville, and Fort Worth School of Medicine, Fort Worth, Texas.

Connecticut March Examination

Dr. Charles A. Tuttle, secretary of the Connecticut Medical Examining Board, reports the practical and written examination held at New Haven, March 12-13, 1918. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 17 candidates examined, 10 passed and 7 failed. Two candidates were granted reregistration licenses. The following colleges were represnted:

College	Year Grad.	Per Cent.
PASSED		
Georgetown University	(1917)	83.1
University of Maryland	(1907)	76.6
Tufts College Medical School	(1915) 75.6; (1917)	83
Columbia University	(1918)	82.8
Fordham University	(1918)	81.8
University and Bellevue Hospital Medical College	(1918)	88.8
University of Pennsylvania	(1917)	77.8
University of Vermont	(1917, 2)	76.5
FAILED		
University of Maryland	(1916) 74.1; (1917)	72
College of Physicians and Surgeons, Boston	(1908)	54.5
University of North Carolina	(1910)	59.3
University of Vermont	(1914)	60.9
Medical College of Virginia	(1917)	63.3
National University, Athens	(1911)	58.3

District of Columbia April Examination

Dr. Edgar P. Copeland, secretary of the Board of Medical Supervisors of the District of Columbia, reports the oral and written examination held at Washington, April 9-11, 1918. The examination covered 16 subjects and included 80 questions. An average of 75 per cent. was required to pass. Ten candidates were examined, all of whom passed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
George Washington University	(1917)	89.2
Howard University (1910) 82.6; (1917) 90.6;	(1918)	77.8, 80, 81
Baltimore Medical College	(1905)	80.1
Harvard University	(1904) 80.4; (1908)	84.7
University of Vermont	(1912)	75.4

Book Notices

Radiography and Radio-Therapeutics. By Robert Knox, M.D., M.R.C.S., L.R.C.P., Consulting Radiologist, Great Northern Central Hospital, London. Part I, Radiography. Cloth. Price, $9. Pp. 403, with 115 illustrations. New York: The Macmillan Company, 1917.

This is one of the best books covering the subject of general roentgen diagnosis issued within recent years. It is especially adapted for use by the general practitioner or the student of roentgenology, although it contains much of interest and information of value to the specialist in this line. It has been thoroughly revised to cover the field to the date of issue, describing modern equipment and the technic employed. The chapter on the localization of foreign bodies by methods used in the present war is of special interest at this time. Numerous plates of gas gangrene cases are shown. The work is well and profusely illustrated, and covers the subject with a thoroughness that leaves little to be desired in a volume with so broad a scope.

Meat and Luxury.—So far as is known, taking meat even in large excess is not harmful, but it represents luxury and waste.—Lusk, Food in War Time.

Medicolegal

Color Blindness as a Loss of Sight

(Routt v. Brotherhood of Railroad Trainmen (Neb.), 165 N. W. R. 141)

The Supreme Court of Nebraska affirms a judgment for the plaintiff for $1,740, the full face of a benefit certificate held by him in the defendant association, and interest, on account of his having become afflicted with color blindness and for that reason having been discharged from the service of a railroad company that had employed him as a railroad trainman. A rule of the association provided that any beneficiary member in good standing who should suffer the complete and permanent loss of sight of both eyes should be considered totally and permanently disabled and should thereby be entitled to receive the full amount of his beneficiary certificate. The plaintiff contended that as a railroad trainman he had become totally blind, and that within the terms of the policy held by him in the defendant association he had suffered the complete and permanent loss of the sight of both eyes, which the defendant denied.

The condition, the supreme court says, was not made that the eyes of the insured should be taken out of their sockets and away from his physical body, but only that he should "suffer the complete and permanent loss of sight of both eyes." It did not say that he should become blind in both eyes so as to become unable to see objects of any kind, but that he should lose "the sight of both eyes." This he did when he became color blind. He lost his sight in both eyes. It affected both eyes alike. Besides, the color blindness was "complete and permanent." He could not see, and that applied to both eyes, and he was discharged because the defect in his vision made him unfit for railroad service. The thing for which he sought indemnity, loss of his vision, came to him. If his insurance did not indemnify him, it served no good purpose. Besides it was ambiguous and misleading, and should be construed as the defendant knew the plaintiff would understand it.

Where the peculiar malady known as color blindness so impairs the sight that the member of a fraternal insurance association of railroad trainmen who is insured therein is unable longer to continue in the train service, and is discharged therefrom on account of such defect in his vision, it will be held that he is entitled to the benefits provided by the certificate, the constitution, and by-laws and rules of the society. In such case, while the sight of the insured may not be entirely destroyed for some purposes, it will be deemed destroyed and lost as to the particular vocation of a railroad trainman, and he will be held entitled to recover on the benefit certificate which he holds. Three members of the court dissent.

Employment of Jail Physician and Remedy of Latter

(Sawyer v. Commissioners of Androscoggin County (Me.), 102 Atl. R. 226)

The Supreme Judicial Court of Maine directs a peremptory writ of mandamus to be issued to compel the county commissioners to fix the pay of the petitioner for services as jail physician. The court considers at some length the question of who, if either, the county commissioners or the sheriff, has the legal right to employ a physician to render medical attendance to sick prisoners confined in jail. The court says that there is no statute in Maine conferring express authority either on the sheriff or on the county commissioners to employ a "physician authorized to attend the sick," as expressed in Chapter 85, Section 47, of the Revised Statutes of 1916, or "the physician appointed to attend said prisoner," as said in Chapter 127, Section 26. Yet these expressions and the necessity of such action necessarily imply the duty and power of some authority, having the control and custody of prisoners, who are helpless in their own right, to employ a physican to administer to the welfare of the prisoners in the county jail at the expense of the county. This authority once implied from the statutes is as positive as if expressed in the statutes.

The situation presents a county containing a jail erected and supported for the confinement and detention of the prisoners that may be committed to it. These prisoners are in the custody of the law and helpless. They can neither confer nor communicate with the outside public except through the medium of some official agency. Their health, as an infliction on themselves, or as a menace to the other prisoners, as in the case of an infectious or loathsome disease, depends on official attention These are not theoretical, but actual, conditions. These circumstances demonstrate the necessity of lodging authority in some agency that can act quickly and efficiently in the employment of medical aid. In view of the official functions of the sheriff, as jailer, and the county commissioners, officers of the county, which agency is the better adapted to meet the requirements of this situation? The conclusion reached by the court is that an interpretation of the statute, by express language, *not only gives, but imposes on*, the sheriff or his deputy, as jailer, the sole responsibility for the care, custody and safeguarding of the prisoners, and by necessary implication authorizes him alone, when necessary, to employ a physician to administer to the prisoners.

It having been determined that the sheriff had the implied power to employ a physician to treat the prisoners, was the physician entitled to the remedy of mandamus? This question could be settled by the process of elimination. Section 27 of Chapter 85 of the Revised Statutes provides that for all subordinate assistants and employees of the jailer the county commissioners shall fix their pay. They therefore cannot bring suit against the county until the pay is fixed: 1. The commissioners, while they had refused to pay the bill presented by the physician in this case, had not fixed his pay. Hence he could not bring an action of assumpsit on an implied contract or quantum meruit (for the reasonable value of his services). 2. He was not a public officer. He was an employee. His employment was conceded. The legality of his employment only was in question. Hence quo warranto did not lie. 3. The county commissioners had not acted, according to the statute, on his bill. They had rejected it, not "fixed his pay" as something or nothing. Hence certiorari would not lie. It quite clearly appeared that no remedy would lie except on a petition for mandamus. The petitioner must show that he was legally employed and had a claim against the county on which it was the duty of the county commissioners to fix the amount to be paid. The legality of his bill depended on the legality of his employment.

Not Liable for Injury to Patient Escaping from Pesthouse

(O'Brien v. Stromme et al. (Mont.), 169 Pac. R. 36)

The Supreme Court of Montana says that the complaint alleged that the plaintiff, being afflicted with smallpox, was taken to the pesthouse maintained at or near Butte for the accommodation of such cases by the Silver Bow County Board of Health; that while in delirium from the disease and because of the board's failure to provide sufficient guards, he escaped on a cold winter's night and so froze his feet that amputation of several toes became necessary, for which he claimed damages. He was nonsuited at the trial, and sought by appeal to present the question of whether the members of the board were liable. The judgment of nonsuit is affirmed.

Conceding that if, in arranging to care for matters of this kind, the board acts judicially or quasi (as it were) judicially, no liability for mere mistakes would exist, the plaintiff insisted that the defendants were liable on the theory that the duties of the board in the premises were ministerial, and for negligent nonfeasance or misfeasance the members must answer to whosoever is injured thereby. Whether this was correct the court might not decide here because the record did not show negligence or any injury due to negligence. It was true that practically all the evidence offered by the plaintiff for that purpose was excluded on objection—why, this court does not entirely understand; but since no question was made of the correctness of these rulings, this court could not import into the record what the plaintiff did not prove. No more than any one else can public officers be held to respond for injuries until it is shown that their fault is the proximate cause of such injuries.

Society Proceedings

COMING MEETINGS

American Medical Association, Chicago, June 10-14.
American Association of Anesthetists, Chicago, June 10-11.
Alpha Omega Alpha Society, Chicago, June 10.
American Climatological and Clin. Assn., Boston, June 5-6.
American Dermatological Association, Philadelphia, May 23-25.
American Laryngological Association, Atlantic City, May 27-29.
Amer. Laryn., Rhin. and Otol. Soc., Atlantic City, May 29-30.
American Medico-Psychological Association, Chicago, June 4-7.
American Ophthalmological Society, New London, Conn., July 9-10.
American Otological Society, Atlantic City, May 28-29.
American Pediatric Society, Lenox, Mass., May 27-29.
American Proctologic Society, Chicago, June 10-11.
American Surgical Association, Cincinnati, June 6-8.
American Therapeutic Society, Richmond, Va., June 7-8.
Conference of State & Prov. Bds. of N. Amer., Washington, June 5-6.
Maine Medical Association, Portland, June 4-6.
Massachusetts Medical Society, Boston, June 18-19.
Montana Medical Association, Butte, July 10-11.
Nat. Assn. for the Study and Prev. of Tuberculosis, Boston, June 6-8.
New Jersey Medical Society, Spring Lake, June 25-26.
North Dakota State Medical Association, Fargo, June 19-20.
Oregon State Medical Association, Portland, June 27-29.
Rhode Island Medical Society, Providence, June 6.
Southern Minnesota Medical Association, Winona, Minn., June 24-25.
Washington State Medical Association, July 10.
Western Roentgen Society, Colorado Springs, June 27-28.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

May, 1918, **15**, No. 5

1 *Cutaneous and Intracutaneous Tuberculin Tests in Infants and Children. M. H. Bass, New York.—p. 313.
2 *Hypertonic Infant; Curative Action of Atropin on Certain of Its Manifestations. S. V. Haas, New York.—p. 323.
3 Effect of Hunger on Nervous Irritability. J. R. Gerstley and R. G. Hoskins, Chicago.—p. 336.
4 *Treatment of Enuresis without Drugs; Report of Thirty-Four Consecutive Recoveries. W. R. P. Emerson, Boston.—p. 339.
5 Xanthochromia of Spinal Fluid with Complete Coagulation in Tuberculous Meningitis. D. B. Leitch, New York.—p. 348.
6 Pylorospasm and Congenital Pyloric Stenosis. J. Foote, Washington, D. C.—p. 351.
7 Congenital Intestinal Obstruction; Report of Case. A. V. St. George, New York.—p. 354.

1. **Value of Tuberculin Tests.**—Each child was given a von Pirquet test which was observed after twenty-four, and again after forty-eight hours. If positive, this was regarded as evidence of tuberculous infection. If negative after forty-eight hours, a second von Pirquet test was performed. After forty-eight hours a third test was made. If this proved negative, an intradermic injection of 0.1 c.c. of 1:1,000 old Koch tuberculin (that is, 0.1 mg.) in saline solution was given. If after forty-eight hours this was negative, 0.1 c.c. of a 1:100 solution (that is, 1 mg.) was injected and repeated after forty-eight hours if negative. If after these six tests the case still failed to react, it was considered definitely negative. In all, 1,165 tests were made on 206 children. In all, fifty-two children showed a positive reaction to some of the tests, a percentage of 25.2. If but a single von Pirquet test had been employed the incorrect conclusion would have been drawn that only 3.3 per cent. of the inmates had been infected with the tubercle bacillus. If two von Pirquet tests had been used the percentage would have been doubled (6.8), and so on, until by the use of the intradermic tests the true percentage of infected cases was found to be 25.2.

2. **Atropin for Hypertonic Infant.**—The hypertonic infant shows a tendency to rigidity, overaction of involuntary muscles and soon after birth develops signs of physical and psychic irritation, presenting the syndrome (physical) of vomiting, often visible peristalsis, constipation and imperfect nutrition; (psychic) or general irritability, insomnia and crying. In Haas' opinion the etiologic factor of this state would appear to be a hyperexcitability of the autonomic nervous system. Although apparently a feeding problem, changes in method and character of feeding does not correct the condition. Atropin in doses of 1 drop or more of a 1:1,000 solution with each feeding usually relieves the condition at once and apparently increases the infant's tolerance for milk. Atropin in these cases may be used in large doses without danger. Haas suggests that investigation along these lines may reveal the etiology of hypertrophic pyloric stenosis.

4. **Drugless Treatment of Enuresis.**—The children included in Emerson's series of thirty-four cases all recovered without the use of any drugs whatsoever. The treatment is directed toward teaching the child the "dry habit" and, on the other hand, of interrupting and eliminating the "wet habit." This treatment consists of four methods, all or one of which may be used in a given case to establish the "dry habit." The "dry habit" once inaugurated must then be continued by careful oversight. 1. Mental suggestion. 2. Establishing the "dry habit" by teaching the reflex to act at regular intervals, and always before the time the "wet habit" occurs. 3. Local irritation by irritating the vesicular sphincter and the posterior urethra by means of a bougie-a-boule, so that sensory impulses passing to the brain will become intensified sufficiently to attract the patient's attention, until the habit of control is attained. 4. Cerebrospinal irritation is produced by the injection into the spinal canal of physiologic sodium chlorid solution, producing such stimulation as to arouse the whole mechanism into consciousness when habit holds it under control. These methods singly or combined, have been sufficient to relieve the thirty-four children in this series.

American Journal of Physiology, Baltimore

April, 1918, **46**, No. 1

8 *Regulation of Renal Activity. Regulation of Urea Excretion by Concentration of Urea in Blood and in Urine. T. Addis, G. D. Barnett and A. E. Shevky, San Francisco.—p. 1.
9 Id. Regulation of Urea Excretion by Anatomic Factors. T. Addis, A. E. Shevky and G. Bevier, San Francisco.—p. 11.
10 *Id. Regulation of Urea Excretion by Unknown Factors. T. Addis, G. D. Barnett and A. E. Shevky, San Francisco.—p. 22.
11 Salivary Factor in Relation to Dental Caries. P. R. Howe and M. R. Keniston, Boston.—p. 28.
12 *Influence of Music on Electrocardiograms and Blood Pressure. I. H. Hyde and W. Scalapino, Lawrence, Kan.—p. 35.

8. **Regulation of Urea Excretion by Concentration of Urea in Blood and in Urine.**—According to the authors neither the concentration of urea in the urine nor the volume of urine are factors which appreciably influence the rate of excretion of urea.

10. **Regulation of Urea Excretion by Unknown Factors.**—There was a progressive increase in the rate of urea excretion in consecutive observations on rabbits subjected to catheterization and bleeding, so that at the last the rate is nearly twice as great as at the commencement of the experiment and exceeds the rate yielded by the rabbit under the same conditions except for the absence of handling. This increase in the activity of the kidney occurs in spite of the absence of any change in blood urea concentration.

12. **Influence of Music on Cardiovascular System.**—The object of the experiment made by Hyde and Scalapino was to ascertain the effect of different kinds of music on the heart and blood pressure in individuals who are known to have musical talent and are fond of music; also in persons who are indifferent and have no fondness for music, in neurasthenics and in some animals. The cardiograms were recorded with the Einthoven string galvanometer. The pulse and pressure were obtained with a Tycos and a modified form of Erlanger's sphygmomanometer, and the music from phonographic records. The pieces of music were first, Tschaikowsky's Symphonie pathétique, characterized by its tragic, slow, minor movements; second, the toreador's brilliant description of the bull fight from Carmen; and third, the National Emblem, a stirring rhythmic march by Sousa. While listening to the symphony, the average effect is a slight decrease if any of the "P. P." wave, and therefore a relatively slight increase in the pulse rate, and also that the amplitude or

E. M. F. of the "R." wave is increased. From two to ten minutes after the music has ceased, the pulse rate and the E. M. F. have increased considerably, but the systolic and pulse pressure have fallen. Consequently the minor tones of the symphony records caused an increase in cardiac activity and action current, but a fall in blood pressure.

Toreador's stirring song produced a different picture of cardiograms. The pulse rate was accelerated and the E. M. F. or amplitude of "R" wave became less as soon as the song was heard. This is graphically shown in the decrease of the "P. P." and "T. P." phases, and height of the "R" wave in cardiograms obtained while listening to the song. The after effect was increased systolic and pulse pressure and pulse rate, but decreased action current. It seems, therefore, that this kind of music had a stimulating effect on the circulation by increasing the blood pressure and pulse rate while lessening the action of current of the ventricular contraction. The effect of the inspiring rhythmical tones of the National Emblem, was a slower pulse rate, a longer pause or "T. P." wave, and an increase of not only the systolic and pulse pressure but also the action current of the ventricular contraction. It seems that this music had its stimulating effect on the vagus, and that this as well as other kinds of music may have an influence on the system in other respects. The authors suggest that it is possible that a careful selection of music may be a beneficial aid in the treatment of nervous disturbances.

Boston Medical and Surgical Journal

May 2, 1918, **178**, No. 18

13 Tuberculosis. J. B. Hawes, 2nd, Boston.—p. 589.
14 Medical Competence and Hospital Efficiency. F. D. Donoghue, Boston.—p. 594.
15 Radium in Treatment of Carcinoma of Buccal Cavity. R. B. Greenough, Boston.—p. 598.
16 Study of Diphtheria Carriers. D. M. Lewis, New Haven, Conn. —p. 602.
17 Plea for Legitimate Trial of Scientific Medical Methods in Chronic Intestinal Conditions Before Resorting to Surgical Interference. M. D. Ordway, Boston.—p. 606.
18 Primary Syphilis of Eyelid; Report of Case. H. D. Lloyd, Boston. —p. 609.

Cleveland Medical Journal

April, 1918, **17**, No. 4

19 Colon Bacillus Infections. J. Phillipps, Cleveland.—p. 215.
20 Determination of Type and Serum Treatment in Pneumococcus Infections. J. E. McClelland, Cleveland.—p. 226.
21 Campaign against Venereal Diseases in State of Ohio. H. N. Cole, Cleveland.—p. 231.
22 Marriage Customs and Human Evolution. C. L. Redfield, Chicago. —p. 236.
23 Simultaneous Avulsion Fracture of Tubercle and Upper Anterior Surface of Both Tibiæ. J. J. Kurlander, Cleveland.—p. 241.
24 Conservation of Vision Classes. S. H. Monson, Cleveland.—p. 245.

Florida Medical Association Journal, Jacksonville

March, 1918, **4**, No. 9

25 Medical Preparedness in Great Drive of Democracy. J. C. Bloodgood, Baltimore.—p. 255.
26 What War Has Done for Medicine. S. W. Lambert, New York. —p. 261.
27 What is Nightmare or Pavor Nocturnus? C. C. Ruter, Madison. —p. 263.
28 Angina Pectoris. J. P. Esch, Daytonia Beach.—p. 264.

Journal of Biological Chemistry, Baltimore

April, 1918, **34**, No. 1

29 Hydrogen Ion Concentration of Contents of Small Intestine. J. F. McClendon, A. Shedlov and B. Karpman, Minneapolis.—p. 1.
30 *Placental Transmission of Creatinin and Creatin. A. Hunter and W. R. Campbell, Toronto.—p. 5.
31 Nutritive Factors in Animal Tissues. T. B. Osborne and L. B. Mendel, New Haven, Conn.—p. 17.
32 The Two Forms of Glycerin. K. G. Falk and K. Sugiura, New York.—p. 29.
33 New Method for Direct Nesslerization of Ammonia in Urine. J. B. Sumner, Ithaca, N. Y.—p. 37.
34 *Presence of Growth Producing Substance in Cultures of Typhoid Bacilli. A. J. P. Pacini and D. W. Russell, Brooklyn.—p. 43.
35 Studies in Metabolic Changes Induced by Administration of Guanidin Bases. Influence of Guanidin on Urinary Ammonia and Acid Excretion. C. K. Watanabe, New Haven, Conn.—p. 51.
36 Id. Relation between Tetanoid Symptoms of Guanidin Administration and Condition of Acidosis. C. K. Watanabe, New Haven, Conn.—p. 65.
37 Id. Influence of Administration of Calcium on Blood Sugar Content in Rabbits with Guanidin Hypoglycemia. C. K. Watanabe, New Haven, Conn.—p. 73.
38 Stoichiometrical Character of Action of Neutral Salts on Swelling of Gelatin. J. Loeb, New York.—p. 77.
39 Estimation of Nonprotein Nitrogen in Blood. I. Greenwald, New York.—p. 97.
40 Estimation of Creatinin and of Creatin in Blood. I. Greenwald and G. McGuire, New York.—p. 103.
41 *Studies in Calcium and Magnesium Metabolism. M. H. Givens, New Haven, Conn.—p. 119.
42 Inorganic Elements in Nutrition. T. B. Osborne and L. B. Mendel, New Haven, Conn.—p. 131.
43 Effects of Electrolytes on Gelatin and Their Biologic Significance. Effects of Mixtures of Salts on Precipitation of Gelatin by Alcohol. Antagonism. W. O. Fenn, Cambridge.—p. 141.
44 Relation of Blood Fat to Sex, and Correlation between Blood Fat and Egg Production in Domestic Fowl. O. Riddle and J. A. Harris, New York.—p. 161.
45 Blood Fat in Fowls. D. E. Warner and H. D. Edmond.—p. 171.
46 Preparation of Pure Lecithin; Composition and Stability of Lecithin Cadmium Chlorid. P. A. Levene and C. J. West, New York. —p. 175.
47 Some Hydantoin Derivatives. C. J. West, New York.—p. 187.
48 *Method for Determination of Sugar in Normal Urine. S. R. Benedict and E. Osterberg, New York.—p. 195.
49 Modification of Lewis-Benedict Method for Determination of Sugar in Blood. S. R. Benedict, New York.—p. 203.
50 Studies in Carbohydrate Metabolism. Preliminary Report on Sugar Elimination in Urine of Normal Dog. S. R. Benedict and E. Osterberg, New York.—p. 209.
51 Id. Study of Urinary Sugar Excretion in Two Normal Men. S. R. Benedict, E. Osterberg and I. Neuwirth, New York.—p. 217.

30. **Placental Transmission of Creatinin and Creatin.**—Hunter and Campbell found that the concentrations of creatinin and creatin in the maternal plasma differ little, if at all, from those of the same substances in the fetal. Parturition is accompanied normally, although perhaps not invariably, by a temporary rise in blood creatinin. This effect appears to be illustrated most strikingly among primiparas. The creatin content of the plasma at parturition corresponds with that found normally in association with creatinuria. The concentration of creatin in the whole blood is generally greater in the fetus than in the mother; but the concentration in the corpuscles, as in the plasma, is practically the same in both. The concentration of creatin in the corpuscles of parturient women is greater than in those of nonpregnant women or of men. It would appear that pregnancy is accompanied by a special accumulation of creatin in the corpuscles.

34. **Growth Producing Substances in Typhoid Bacilli Cultures.**—According to Pacini and Russell the typhoid bacillus, in growing, produces vitamin which can be isolated and identified by proper biologic methods. The bearing on the effect of the same on the general metabolism of typhoid patients, and indications of a scientific basis for new methods of feeding these cases, are under investigation.

41. **Studies in Calcium and Magnesium Metabolism.**—The daily urinary calcium and magnesium excretion of nine healthy adults on a diet of natural foods containing more magnesium than calcium ranged from 0.05 to 0.25 gm. calcium and from 0.03 to 0.15 gm. magnesium; on a diet having more calcium than magnesium the limits were 0.12 to 0.47 gm. calcium and 0.05 to 0.23 magnesium. In the nine persons in general more calcium than magnesium was excreted in the urine; or if such was not the case the usual calcium-magnesium relation could be promptly brought about by ingestion of milk. The urinary output of both calcium and magnesium was increased by consumption of milk. Dried skimmed milk was practically as effective as raw milk in influencing the urinary alkali earth excretion. The urinary calcium excretion was always increased after taking calcium lactate. The urinary magnesium excretion was apparently not affected by the introduction of magnesium citrate. Comparable quantities of calcium salts, represented by calcium lactate, were not as efficacious as milk in producing increased urinary excretion of lime. Attention is called to the variation in the relative amounts of alkali earths excreted through the kidneys by different persons. The quantities bear no fixed relation to body weight, but presumably are influenced not only by the diet but also by the tissue reserves, particularly in the bones, of the persons.

48. **Determination of Sugar in Urine.**—The procedure adopted by Benedict and Osterberg is an adaptation of the colorimetric

procedure of Lewis and Benedict for determination of sugar in the blood. Their work with the Myers' modification has convinced us that results by this method are too high (due partly to imperfect removal of creatinin). The method presented is considered under two divisions: (1) the preliminary precipitation of interfering substances from the urine, and (2) the determination of the sugar in the filtrate. They have found that urines can be almost entirely freed from the substances enumerated above by single precipitation with excess of mercuric nitrate in presence of a slight excess of sodium bicarbonate. After subsequent removal of the mercury with zinc dust the filtrates are water-clear, and contain almost no measurable nitrogen, or at least not more than 0.1 mg. per c.c. No creatinin can be detected in the filtrates. The special reagents used in the final method for the determination of sugar in urine are: 1. Mercuric nitrate solution. It is prepared as follows: To 160 c.c. of concentrated nitric acid in a beaker add in small portion, 220 gm. of mercuric oxid. When all is dissolved heat the mixture to boiling, cool and add 60 c.c. of 5 per cent. sodium hydroxid solution. Make up to 1 liter and filter. Keep in a brown bottle. 2. Picrate-picric acid solution. To 500 c.c. of 1 per cent. sodium hydroxid solution in a liter flask or stoppered cylinder add 36 gm. of picric acid, and about 400 c.c. of hot water. Shake occasionally until the picric acid is dissolved, cool and dilute to 1 liter.

The procedure for the sugar determination is as follows: Measure 15 or preferably 20 c.c. of urine into a 500 c.c. beaker and add an equal volume of the mercuric nitrate solution and mix. Then add solid sodium bicarbonate in moderate quantities, with gentle shaking, until frothing ceases and the mixture reacts alkaline to litmus paper. Filter at once through a dry filter into a small dry flask or beaker. To the perfectly clear filtrate add a pinch of zinc dust and 1 or 2 drops of concentrated hydrochloric acid. Shake and let stand for about five minutes. Filter through a small dry filter into a dry test tube or small beaker. From 1 to 4 c.c. of this final filtrate (the volume to be used depends on the sugar content of the original urine, from 0.5 to 2 mg. of sugar is the quantity desired) are measured into a large test tube, which should be graduated to indicate 12.5 and 25 c.c. Where less than 4 c.c. of filtrate have been used enough water is added to make exactly 4 c.c. and 1 c.c. of 20 per cent. (anhydrous) sodium carbonate solution is added. Four c.c. of the picrate-picric solution is now added, the tube plugged with cotton, and placed in boiling water for ten minutes. The tube is then removed, cooled to room temperature with the help of running water, and the contents are diluted with water to the 25 c.c. mark, or to 12.5 c.c. if the quantity of sugar present was much below 1 mg. The colored solution is then matched (within half an hour) in a colorimeter against a standard prepared by treating 1 mg. of glucose in 4 c.c. of water, just as the final filtrate was treated; or against a permanent standard of picramic acid solution or potassium dichromate.

Benedict and Osterberg have found that the best permanent standard is to be prepared from pure picramic acid, together with some of the picrate-picric acid solution used in the determination. This standard solution has the following composition: To 105 c.c. of exactly 0.01 per cent. picramic acid solution in 0.02 per cent. sodium carbonate solution, add 0.5 c.c. of 20 per cent. sodium carbonate solution, and 15 c.c. of the picrate-picric acid solution. Then dilute to 300 c.c. with distilled water. Starting with pure picramic acid, the depth and quality of the color of this solution duplicate very exactly that obtained from 1 mg. of glucose dissolved in 4 c.c. of water, treated as described for the final urine filtrates, and the colored solution diluted to 25 c.c. The standard in the colorimeter should be set at a height of 15 mm.

Journal of Laboratory and Clinical Medicine, St. Louis

April, 1918, [illegible] No. 7

52 *Investigation of Certain Phenomena of Allergy with Special Reference to Respiratory and Circulatory Systems in Relation to Cause of Death. M. D. Pelz and D. E. Jackson, St. Louis. —p. 387.
53 *Studies on Immunity with Special Reference to Complement Fixation. A. Blumberg, Salt Lake City.—p. 397.
54 *Meningitis at Camp Greene. P. G. Woolley, Charlotte, N. C. —p. 409.
55 *Intravenous Use of Red Mercuric Iodid. L. W. Rowe, Detroit. —p. 412.
56 Outline for Combined Teaching of Pathology and Bacteriology in Small Medical Colleges. E. Kellert, Albany.—p. 416.
57 Clinical Method for Determining Respiratory Exchange in Man. R. G. Pearce, Cleveland.—p. 420.
58 *Highly Differentiating Polychromatic Toluidin-Blue Stain. M. Barron, Minneapolis.—p. 432.
59 Ordinary Brown Mice Substitute for White Mice in Pneumococcus Grouping. O. J. Walker and W. J. Bruce, Oklahoma City. —p. 434.

52. **Allergic Phenomena and Cause of Death.**—From the experimental evidence obtained by Pelz and Jackson are certain that on the injection of the antigen in highly sensitized spinal dogs, the asphyxia produced by the acute bronchial constriction may readily be the cause of death, and that the phenomenon occurs with the liver and other abdominal viscera wholly removed from the circulation. The phenomena occur in those dogs sensitized to egg white equally as well as in those sensitized to normal horse serum. The bronchial and blood pressure changes produced in acute anaphylactic shock bear a striking and almost complete resemblance to those produced by certain opium alkaloids, such as codein, heroin, peronin, etc. For producing relaxation of the bronchioles, and aiding in recovery in acute anaphylactic shock, epinephrin is the most dependable substance, but to produce the best effects the drug must be injected early, before the bronchoconstriction has had time to become too intense.

53. **Studies on Immunity.**—The authors show that true antigens (that is, antigens which contain the etiologic factor of the disease, emulsified or autolyzed) will work only where there is a polymorphonuclear leukocytosis present. While tuberculosis is a disease presenting a lymphocytosis, it will fix the complement with a specific antigen, which, however, is not a bacterial emulsion, but a heated egg medium culture containing small amounts of lipoid. Tissue extracts of mammals, birds, reptiles and fishes may serve as useful antigens for the diagnosis of syphilis. If normal urine is added, the complement of the hemolytic system is affected without the presence of a specific antigen. The presence of hemolysis in the test of the fourth group indicates either some type of affection of the kidney (even when no albumin or casts are demonstrable) or pregnancy, the two conditions frequently being separable by the clinical history of the patient. The absence of hemolysis in a hemolytic system to which urine is added speaks against the condition of pregnancy. In complement fixation without an antigen, reaction affecting the third tube (which serves as control tube and should not hemolyze) speaks for nephritis, rather than pregnancy.

54. **Meningitis at Camp Greene.**—Statistics at hand indicate that there have been between 5 and 7 per cent. of carriers in Camp Greene. In the only organization which made use of systematic nasal sprays since the first of the year not a single case developed, and in those organizations in which sprays were resorted to after the appearance of the disease no other cases appeared. Woolley says that this may be merely coincidental, but when one discovers that also following the adoption of sprays the total sick rate falls, especially that due to respiratory diseases, and bears in mind the current conception that the meningococci inhabit the nasal passages, one comes to have a very healthy respect for dichloramin-T as an agent for the prevention of diseases of upper respiratory tract origin.

55. **Intravenous Use of Mercuric Iodid.**—Rowe claims that red mercuric iodid in combination with an equal amount of potassium iodid can be injected in solution into animals intravenously with comparative safety if reasonable care is exercised in the manner of injection and in the size of the dose injected. It is very little if any more toxic than mercuric chlorid, safer for intravenous use, and of greater germicidal efficiency.

58. **Differentiating Polychromatic Toluidin-Blue Stain.**—The preparation of the stain used by Barron is as follows: toluidin-blue, 1.0; potassium carbonate, 1.0; distilled water, 400.0. Boil solution in glass beaker until it is reduced to

300 c.c. Cool; than add: toluidin-blue, 2.0; sodium chlorid, 3.0; glacial acetic acid, 12.0; alcohol, 15.0. Stir mixture until ingredients are completely dissolved. It is ready for use at once, and can be used over and over again. It does not precipitate and keeps indefinitely. The following technic is employed in staining frozen sections for rapid diagnosis. A piece of tissue which is not more than 3 mm. in thickness is dropped into boiling 10 per cent. formaldehyd solution for about one minute. Fresh tissue without hardening may be used in many cases but the sections are more difficult to handle. The tissue is cut with the freezing microtome, and the sections are placed in a dish containing physiologic salt solution. The sections are quickly straightened out and carried over into a small dish of the stain where they are left for about fifteen seconds. They can be left for a much longer time without overstaining. The sections are then transferred to another dish of physiologic salt solution where they are rapidly washed for a few seconds to remove the excess of stain, and then are at once mounted in the same solution on a slide, and a coverslip applied. The section is now ready for examination. The entire process, from the time the section is cut to the completed preparation for microscopic study, need not take more than one minute in most instances.

Journal of Nervous and Mental Disease, Lancaster, Pa.

April, 1918, **47**, No. 4

60 Influence of Angle of Section on Measurements of Cortex Depth and on Cyto-Architectonic Picture. S. T. Orton, Philadelphia. —p. 241.
61 *Unilateral Ophthalmoplegia; Report of Case Due to Carotid Aneurysm. H. Viets, Boston.—p. 249.
62 *Medical Treatment of Exophthalmic Goiter; Special Reference to Use of Corpus Luteum Extract. H. H. Hoppe, Cincinnati.—p. 254.
63 *Intracranial Treatment of Paresis. H. A. Cotton and W. W. Stevenson, Trenton, N. J.—p. 262.

61. **Unilateral Ophthalmoplegia Due to Carotid Aneurysm.**—An unusual case of aneurysm of the right intracranial carotid artery is reported by Viets. The symptoms were: complete ophthalmoplegia with sensory disturbances of the trigeminus. The aneurysm was seen at operation. No etiologic factor was found. Rupture has not taken place after seven months of symptoms. The author has failed to find in the literature a report of a similar case.

62. **Medical Treatment of Exophthalmic Goiter.**—Hoppe has treated about twenty cases of exophthalmic goiter. The ordinary Forchheimer treatment was attended with only indifferent success. The combination, however, of quinin hydrobromate, extract belladonna with the extract corpus luteum was found to be rapidly beneficial in nearly all the cases and the improvement was usually so rapid and so marked, in a few days to a week, to convince Hoppe that rest, diet, hygienic measures, all of which he had used for twenty years before, could not account for the result, but that the corpus luteum was the active therapeutic agent.

63. **Intracranial Treatment of Paresis.**—The authors make use of two methods—the method of Hammond and Sharpe and the method of Wardner. The difference between these two methods is that in the former the serum is introduced into the ventricle and in the latter it is introduced under the dura. Six or more treatments are given by the former and then several of the latter, or alternating them. The authors have modified the methods of intracranial treatment, both the intraventricular and the subdural, so that the time necessary for these operations has been materially reduced. They do not give a general anesthetic, but merely cocainize the scalp.

The results of four years' experience in the treatment of cerebrospinal syphilis are summarized as follows: 1. The intracranial (either the intraventricular or subdural) method is the most efficacious method in the treatment of paresis and should be the method of preference. 2. The intraspinal method is the most efficient one for the treatment of tabes and syphilitic meningitis. 3. Arsphenamin is the best drug for the treatment of cerebrospinal syphilis and preferable to the diarsenol brand and other substitutes. 4. The mercurialized serum of Byrnes is of doubtful value, as it is not of sufficient potency to destroy the spirochete. 5. The success of any method of treatment depends on the stage in which the disease is treated, and the earlier the stage the better the outcome of the treatment. Therefore, if possible, the disease should be diagnosed in the preparetic stage or as soon as symptoms are present. 6. Every case of syphilis should have an examination of the spinal fluid at frequent intervals after all symptoms of the acute stage are lost, especially if the blood Wassermann remains positive after sufficient treatment has been given. 7. All cases of paresis can be arrested and possibly cured if treatment is begun early enough. 8. Physicians should be taught to recognize the importance of an early diagnosis and trained to make such a diagnosis, so that cases can be referred for treatment before the process has gone too far for treatment to be effective. 9. The treatment of paresis should be undertaken by all institutions for the insane, and all cases treated, as it is a difficult matter to decide whether a given case has reached the stage when treatment would be useless.

Medical Record, New York

May 4, 1918, **93**, No. 18

64 Narcotic Drug Addict. E. S. Bishop, New York.—p. 751.
65 Problem of Narcotic Addiction of Today. C. F. Stokes, New York. —p. 755.
66 Cellular Changes in Various Forms of Acute Leptomeningitis. G. B. Hassin, Chicago.—p. 760.
67 Plea for Use of Potassium Nitrate in Treatment of Cancer. E. P. Robinson, New York.—p. 764.
68 Some of Rabelais' Ideas of Stomach. D. W. Montgomery, San Francisco.—p. 769.

Military Surgeon, Washington, D. C.

April, 1918, **42**, No. 4

69 Manifest Pulmonary Tuberculosis. G. E. Bushnell.—p. 383.
70 *Report on Neurocirculatory Asthenia and Its Management. T. Lewis.—p. 409.
71 Malingering in U. S. Troops, Home Forces, 1917.—p. 427.
72 *Foot Strapping. D. J. Morton and R. T. Taylor.—p. 450.

70. **Neurocirculatory Asthenia.**—Lewis points out that this is not a new and strange syndrome, but a condition frequently seen in civilian practice in a milder form after an attack of grip, typhoid, severe tonsillitis, or scarlet fever. The general type of patient is one who is readily exhausted, physically and psychically. His subjective symptoms are referable chiefly to the circulatory apparatus and nervous system. He complains not constantly perhaps of dyspnea on effort, of feeling generally "shaky," of pains in the left chest, of palpitation, headache, dizziness and faintness. He is usually susceptible to cold and becomes readily fatigued. He is often quite aware of his tremor and complains of the fact that he perspires too profusely. Lewis suggests a new name for this condition, neurocirculatory asthenia. He suggests further that all medical officers of the American forces should learn to recognize the clinical picture of this syndrome, and a certain selected number should have the opportunity of studying such cases and of learning by actual experience to employ a system of graduated exercises as a therapeutic measure and as an aid to categorization. To limit the occurrence of this disorder in a prophylactic way it is suggested that: (*a*) Measures be taken for the early recognition of cases of neurocirculatory asthenia, that is, at the time men are called to service and at the training camps. (*b*) Men who are seen to flag or show signs of breathlessness by their drill instructors should be reported to the medical officer and thoroughly overhauled from the point of view of this syndrome at an early date. (*c*) The period of convalescence after infectious diseases be made sufficiently long, and, after complete recovery, the soldiers be gradually hardened before returning to full duty. It is strongly recommended, above all, not to transport soldiers suffering from this disorder overseas for active service, as it is now known that their period of service on full duty is short.

72. **Foot Strapping.**—A method of strapping with adhesive plaster for foot strains and for pronated and flattened feet is submitted by Morton.

Nebraska State Medical Journal, Norfolk

April, 1918, **3**, No. 4

73 Medical Inspection in Public Schools of Omaha. E. T. Manning, Omaha.—p. 105.
74 Nephritis. A. Sachs, Omaha.—p. 109.
75 Diagnosis and Management of Cardiovascular Renal Disease. J. W. Shuman, Sioux City, Iowa.—p. 114.
76 Treatment of Certain Fractures Occurring in or Near Joints. C. H. Newell, Omaha.—p. 116.
77 Physical Examinations of Applicants for Aviation Service, U. S. Army. F. M. Conlin, Omaha.—p. 120.
78 Prophylaxis. J. L. Sutherland, Grand Island.—p. 124.
79 Smallpox. R. W. Fouts, Dawson.—p. 130.

Neurological Bulletin, New York

April, 1918, **1**, No. 4

80 Hemorrhage into Basal Cisterns and Ventricles of Brain. F. Tilney and L. Casamajor, New York.—p. 161.
81 Multiple Sclerosis Associated with Internal Hydrocephalus. S. P. Goodhart and J. H. Globus, New York.—p. 175.
82 Infantile Pseudobulbar Palsy with Choreo-Athetosis. O. S. Strong, New York.—p. 179.
83 Case of Amyotrophic Lateral Sclerosis. I. S. Wechsler, New York. —p. 183.
84 Chorea Followed by Paralysis, Simulating Anterior Poliomyelitis. C. A. McKendree, New York.—p. 187.
85 Two Cases of Superior Alternating Hemiplegia—Weber's Syndrome. J. H. Nolan and F. Tilney, New York.—p. 192.
86 Thalamic Syndrome with Left Hemianopsia and Right Optic Atrophy. O. S. Strong, New York.—p. 199.

New York Medical Journal

April 27, 1918, **107**, No. 17

87 Liberty Loan and Physician. A. Jacobi New York.—p. 769.
88 Three Things Liberty Bonds Can Do. R. T. Morris, New York. —p. 769.
89 Morbid Impulses. A. Gordon, Philadelphia.—p. 771.
90 Genito-Urinary Clinic. N. P. Rathbun, Brooklyn.—p. 774.
91 Trend of Modern Dermatologic Research and Its Bearing on General Medicine. M. Scholtz, Cincinnati.—p. 775.
92 Factors in Causation of Tinnitus Aurium. J. L. Maybaum, New York.—p. 780.
93 Value of Chemical Tests on Serums and Spinal Fluids of Syphilitics. B. Mann and A. I. van Saun, Albany.—p. 783.
94 An Air Expansion Pipet Reagent Bottle. J. I. Fanz, Philadelphia. —p. 787.
95 Biologic Law and Human Health. J. S. Lankford, San Antonio, Texas.—p. 788.
96 Orthopedic Principles Applicable to War Cripples as Aid to Vocational Occupation. J. M. Taylor, Philadelphia.—p. 791.
97 Neuropsychiatry and Mobilization. P. Bailey, Washington, D. C. —p. 794.

May 4, 1918, **107**, No. 18

98 True Epileptic. L. P. Clark, New York.—p. 817.
99 Relation of Carbohydrates to Protein Synthesis. N. W. Janney, New York.—p. 824. To be concluded.
100 Clinical Significance of Fecal Analysis. L. W. Kohn, Philadelphia. —p. 829.
101 New Method of Preserving and Mailing Specimens for Wassermann. W. L. Snider, Hot Springs, Ark.—p. 831.
102 When a Cancer Is Not a Cancer. E. V. De Pew, San Antonio, Texas.—p. 832.
103 Two Stage Operation for Tendon Suture in Hand. J. E. Fuld, New York.—p. 833.
104 Hydronephrosis as Underlying Cause in Attacks of Acute Abdominal Pain. S. P. Martin, Buffalo.—p. 834.
105 Reconstructing Crippled Soldiers of France. D. C. McMurtrie, New York.—p. 839.

Public Health Journal, Toronto

April, 1918, **9**, No. 4

106 Infant and Child Welfare Work. A. Brown, Toronto.—p. 145.
107 Mothers' Pensions vs. Provincial Aid for Children. A. M. Huestis, Toronto.—p. 163.
108 Child Welfare Clinics. E. M. Forsythe, Toronto.—p. 169.
109 Birth Registration and Infant Welfare. R. E. Mills, Toronto.—p. 171.
110 Essentials of Family Case Work. R. C. Dexter, Montreal.—p. 173.

Ohio State Medical Journal, Columbus

May, 1918, **14**, No. 5

111 Health Insurance. E. R. Hayhurst, Columbus.—p. 270.
112 Seminal Vesiculitis. I. E. Seward, Cleveland.—p. 275.
113 Chorio-Epithelioma; Report of Case. K. Becker, Toledo.—p. 278.
114 Progress in Therapeutics for 1917. C. W. McGavran, Columbus. —p. 281.

Rhode Island Medical Journal, Providence

May, 1918, **2**, No. 5

115 Eyestrain as Related to General Practice. F. J. McCabe, Providence.—p. 71.
116 Review of One Hundred Consecutive Cases of Acute Diseases of Appendix, Gallbladder, Duodenal and Gastric Ulcers. F. V. Hussey, Providence.—p. 75.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

April 6, 1918, **1**, No. 2988

1 Case of Huntington's Chorea. C. Allbutt.—p. 389.
2 Necessity for Fuller Consideration of Local Processes of Disease and Repair in Treatment of Pulmonary Tuberculosis. H. M. Davies.—p. 390.
3 Importance of Regulating Fat-Intake in Diabetes Mellitus. P. J. Cammidge.—p. 393.
4 *Phlebotomus Fever. J. H. Hartley.—p. 395.
5 Id. J. A. Delmege and C. S. Staddon.—p. 396.
6 Involvement of External and Internal Popliteal Nerves in Lesions of Sciatic Nerve. T. E. Hammond.—p. 397.
7 Epidemiology of Meningococcal Meningitis, of Cerebrospinal Fever. A. M. N. Pringle.—p. 398.
8 Fatal Case of Paratyphoid B Simulating Typhus. P. S. Hichens and E. J. Boome.—p. 398.

April 13, 1918, **1**, No. 2989

9 *Nature and Symptoms of Cardiac Infection in Childhood. F. J. Poynton.—p. 417.
10 *Shell Shock and Neurasthenia in Hospitals in Western Command. E. W. White.—p. 421.
11 *War Psychoses Occurring in Cases with Definite History of Shell Shock. R. Eager.—p. 422.
12 Early Stage of Hysteria. M. Culpin.—p. 425.
13 Medical Aspects of Food Problem. R. Hutchison.—p. 426.

4. **Phlebotomus Fever.**—An outbreak of phlebotomus fever (sandfly fever) occurred in a squadron of yeomanry on outpost duty in mid-Egypt in the middle of the summer of 1917. The post was on the western edge of the cultivation, and Hartley was in medical charge of the unit. Of the total strength, 86.4 per cent. were infected. The incubation period was from four to seven days. The onset was very sudden, accompanied with severe malaise, headache, and suffusion about the eyes and postorbital pain. Pain in the lumbar region was generally intense, and pain and cramp in the limbs occurred. Constipation was nearly always present and profuse sweating. The temperature rose quickly to 102.5 or 103, and on a few occasions to 105. After twenty-four hours the pyrexia diminished, and at the end of three days, fell to normal. The pulse was not correspondingly accelerated—it was seldom above 80; it became soft and weak and the cardiac condition required attention. The suddenness of the onset was the marked feature. Subsequent debility was a marked feature considering the shortness of the acute stage, but many managed to recover sufficiently to return to light duty after fourteen days.

9. **Cardiac Infection in Childhood.**—Among 524 children, all under 12 years of age, examined by Poynton, the following conditions were present: heart disease in 293; chorea in 268; arthritis and arthritic pains in 267; sore throats in 147; nervous manifestations other than chorea in 80. Two important groups are recognized by the author: 1. Cases with sore throat, arthritis, and morbus cordis. 2. Cases with chorea and morbus cordis.

10. **Shell Shock and Neurasthenia.**—The mental symptoms noted by White in over 800 cases of shell shock and neurasthenia have occurred in the following order of frequency: confusional, melancholic, delusional, stuporose and maniacal. In many patients the memory was impaired for recent events and day to day actions and happenings, and there is a blank in regard to the incidents of their shell shock period. Memory for recent events to daily life, however, improves as the case progresses to recovery. The moral tone of the individual may be changed for the worse, and this change of character may be out of all proportion to the severity of the original shell shock. With it there may be altered feelings, affections, temper, and habits generally. From the medicolegal standpoint this morbid mental state is very important in regard to responsibility, and must be duly recognized. The patients with acute symptoms are kept in bed, but made to get out and walk a few steps every day, when able. Absolute quiet and fresh air (veranda life if weather permits) are essential, and no stimulants can be allowed. The milder cases with tremors and those with hysterical or pithiatic, and mild hystero-epileptic symptoms improve under bromid and valerian, nux vomica, arsenic, and other nerve tonics, but

environment and habits of life play an even more important part than drugs. Carefully controlled employment of mind and body is most necessary to expedite recovery and divert the patient's thoughts. He must be outdoors whenever the weather permits, engaged in gardening, wood-cutting, and outdoor sports and games, and when indoors, in workshops, and in taking part in the various amusements of home life. Clear, bracing air is very important.

11. **War Psychoses in Cases of Shell Shock.**—The following were by far the commonest symptoms noted by Eager in an examination of over 4,000 cases: amnesia, melancholia, mental confusion, delusion· and hallucinatory disturbances. The condition of stupor was also met with, but was not so common as the aforementioned, and in some instances the sequence of events showed that cases which had been admitted to the hospital originally as definite cases of shell shock, have subsequently passed into a neurasthenic condition, which again has not improved, but drifted into states closely resembling dementia praecox. Retardation of thought was a pronounced symptom in the majority of cases; mutism and deafness were also met with. Associated with the above symptoms were headache, insomnia, terrifying dreams, general nervousness, and varying strange sensations in the head. As regards the physical signs, the deep reflexes were always very much increased, tremors were present almost universally in the tongue and outstretched hands, and the pupils were generally dilated. Frequently patients complained of throbbing sensations in the precordia, clamminess of the skin, and appeared before one as highly strung and emotional.

Bulletin of Naval Medical Association of Japan, Tokyo

March, 1918, No. 18

14 Changes of Carcinoma in Breast After Roentgen-Ray Treatment, with Special Reference to Paget's Disease of Nipple. J. Ogata. —p. 1.
15 Case of Tuberculosis of Penis. T. Kurita.—p. 3.

Indian Medical Gazette, Calcutta

February, 1918, **53**, No. 2

16 Chlorination of Drinking Water Supplies in Field. P. Hehir.—p. 41.
17 *Intravenous Injections of Tartar Emetic in Treatment of Malaria. T. A. Hughes.—p. 42.
18 Quinin in Malarial Prophylaxis. A. R. S. Anderson.—p. 45.
19 Treatment of Cerebrospinal Syphilis by Means of Sero-Arsenous and Mercuric Iodid. I. F. Frost and O. I. Dewadatta.—p. 48.
20 Indian Crèche in Bangalore. S. Amritaraj.—p. 51.
21 Tobacco Fleas and Plague. S. Mallanah.—p. 53.

17. **Tartar Emetic in Treatment of Malaria.**—The observations recorded by Hughes were made in the spring of 1917 at an Indian hospital in German East Africa. The cases, except three, were not chosen, some being severe and some slight. The exceptions were three cases of blackwater fever, which after the blackwater had disappeared developed fever with parasites in the peripheral blood. There being some doubt as to the advisability of administering quinin except in small doses to such cases, tartar emetin intravenously was tried. One case had a relapse of blackwater after an intramuscular injection of 10 grains of quinin bihydrochlorid. In all, thirteen cases were treated, ten of subtertian, two of benign tertian, and one of quartan. Two of the subtertian cases and the quartan case were blackwater convalescents. The drug was injected in 2 per cent. solution in normal saline by means of a 10 c.c. syringe into a vein at the bend of the elbow, the quantities administered varying from 3 to 14 centigrams, given as a rule every second or third day. At first the smaller quantities were used beginning with 3 or 4 centigrams and working up to 8, while in later cases 10 centigrams was given as the initial dose and increased to 14 centigrams. With the latter dosage toxic symptoms manifested themselves, coughing and vomiting being sometimes troublesome. Care had to be taken that none of the solution escaped into the tissues surrounding the vein. This happened on two occasions and gave rise to much local pain, and eventually in one case to suppuration. During the administration of tartar emetic all quinin was withheld, except in one case. So far as conclusions can be drawn from the few cases here mentioned, the results would tend to show that tartar emetic is not a cure for subtertian malaria, at least in nontoxic doses. Curative effects were observed in varying degrees only when doses toxic to the patient were given. This bears out Greig's statement that tartar emetic appears to be rather a general protoplasmic poison than a specific poison for the malarial parasite.

Journal of Tropical Medicine and Hygiene, London

April 1, 1918, **21**, No. 7

22 Possible Intermediary Hosts of Schistosoma in South Africa. I. G. Cawston.—p. 69.

Practitioner, London

April, 1918, **100**, No. 4

23 Prevention and Treatment of Hemorrhage in Enucleation of Tonsils. W. Hill.—p. 301.
24 Hemorrhage Following Removal of Tonsils and Its Treatment. I. Moore.—p. 334.
25 Pro Ether. D. J. Munro.—p. 362.
26 *Impetigo Contagiosa as Possible Cause of Acute Nephritis; Report of Cases. W. F. Stiell.—p. 368.
27 Masturbation. J. Hepburn.—p. 372.
28 Prevention of Measles. J. A. Milne.—p. 376.
29 Hematuria; Report of Two Cases. W. H. S. Armstrong.—p. 379.
30 False Aims in Medicine. O. C. Gruner.—p. 381.
31 *Historical Case of Rickets. C. Burland.—p. 391.

26. **Impetigo Contagiosa as Cause of Nephritis.**—Stiell reports five cases of acute nephritis resulting from typical impetigo contagiosa. From an analysis of these five cases, it seems probable that an acute streptococcal impetigo is capable of producing an acute nephritis, every bit as severe as that following an ordinary attack of scarlatina. Stiell does not suggest that every case of impetigo subsequently develops nephritis as a complication, but, at the same time, he does consider that the risk of this occurrence, even in efficiently treated cases, is quite as great as in scarlatina, and that impetigo is frequently and explanation of many of the sudden and acute cases of nephritis, occurring in children, for which formerly there has been no satisfactory explanation. He suggests that in a similar manner it is possible that many of the cases of so-called "trench nephritis" in soldiers are, in fact, a complication either of an impetiginous pediculosis or an impetiginous scabies.

31. **Historical Case of Rickets.**—Burland republishes an account of the medical examination of the remains of Princess Elizabeth, daughter of King Charles I., who died at Carisbrook Castle, September 8, 1650, written by E. P. Wilkins in 1856.

Archives des Maladies du Cœur, etc., Paris

February, 1918, **11**, No. 2

32 *The Blood in Typhus. D. Danielopolu.—p. 49.
33 *Aortic Insufficiency from Air Concussion. A. Cramer.—p. 66; J. Brossard and J. Heitz.—p. 71.
34 *Pulsus Alternans and Digitalis. Carpentier.—p. 79.

32. **The Blood in Typhus.**—More or less pronounced leukocytosis was evident in the first week in 62 per cent. of the 250 typhus patients examined, and in the second week in 96 per cent. In the severer cases the leukocytes numbered from 20,000 to 128,000, the leukocyte curve thus serving as a reliable index of the toxic action of the disease. More than 20,000 indicates an unfavorable outcome. A leukocytosis rapidly jumping from 25,000 to 50,000 and 90,000 served to differentiate typhus in one puzzling case in which the temperature dropped early to normal and below. The hyperleukocytosis also revealed associated typhus in some typhoid cases. Any complicating inflammatory process in typhus is liable to increase the leukocytosis, but this has no bearing on the prognosis. The blood shows constantly mononuclear leukocytes with protoplasm staining intensely blue, excentric nucleus, and no granulations, but this type of "plasmatic cells" are found in certain other infectious diseases, although less numerous.

33. **Aortic Insufficiency from Air Concussion.**—Cramer's patient presented the signs of severe aortic insufficiency which had developed after the young soldier had been flung several feet into the air by the air concussion from a bomb. He had previously been healthy and had always escaped the diseases which predispose to heart disease, but he is now one of the *grands blessés médicaux* of the war.

Brossard and Heitz report two similar cases of traumatic aortic insufficiency following shell shock. In one the valvular symptoms were pronounced at once; in the other they developed in the course of a few days. The wind from an exploding bomb, without fall or contusion, even with the man already flat on the ground, we know is capable of inducing hemorrhage in the nerve centers or rupture of both lungs as in Sencert's case, injury of the optic layer, as in Léri's case, and it was evidently responsible for the laceration of the aortic valve, the most fragile of all the valves, in these three cases.

34. **Pulsus Alternans.**—Carpentier compares recent works on pulsus alternans with Windle's study of the effect of digitalis on alternance of the pulse in seventy cases. None of Windle's patients survived for more than three years, but some improvement under digitalis was constant. The pulsus alternans was never accentuated; it generally became attenuated under the digitalis and during the following two or three weeks, except in the cases with arteriosclerosis. Windle does not seem to have had his attention called to the frequency of syphilis in the antecedents in cases of pulsus alternans. Some others have reported syphilis certain in nine and probable in four others in forty cases of alternance, or 15 per cent. in other groups. In Windle's experience, the pulse never assumed the alternans type during treatment with digitalis except in two cases, and in one of these it subsided under the continued use of tincture of digitalis. He pushes it until nausea or coupled rhythm appear, giving from 12 to 28 gm. of the tincture (*Quarterly Journal of Medicine,* 1917, **10,** No. 40), according to the severity of the case. The effect is exhausted in two or three weeks, and the digitalis must then be resumed.

Archives de Médecine et de Pharm. Militaires, Paris

December, 1917, **68,** No. 6

35 *Operative Indications for First Treatment with Multiple War Wounds. J. Okinczyc and H. D. Clavaud.—p. 833.
36 *Comparative Study of Antiseptic and Aseptic Treatment of Wounds. F. Ferrari and A. Delotte.—p. 858.
37 *War Nephritis. C. Laubry and L. Marre.—p. 885.
38. Camp Epidemic of Bacillary Dysentery. C. Lesieur, F. Pellagot and P. Jacquet.—p. 903.
39 Malaria in Morocco. L. Netter and J. Guilhem.—p. 911.
40 Factitious Albuminuria. Serr, Biron and Brette.—p. 935.

January-February, 1918, **69,** No. 1-2

41 *Transactions of the Third Conférence Chirurgicale Interalliée. —p. 1.

35. **The Indications with Multiple Wounds.**—Okinczyc and Clavaud describe twenty-three cases in which the large number of wounds seemed to forbid any attempt at operative measures, but in which they succeeded in enlarging the limits of the possible and saving life in many of these nontransportable cases. The decision as to whether to operate or not should be made in from thirty to forty-five minutes during which time heat and other measures to combat shock are applied. Heating longer than this predisposes to hemorrhage. If the radial pulse is 120 or over or is imperceptible at this time, there is little hope from any intervention. Two of the men had no perceptible radial pulse for twenty-four or thirty-six hours, but then it reappeared and the men recovered after the amputation done then. Roentgenoscopy is indispensable to show the number and location of the multiple projectiles. In eleven cases of abdominal wounds with numerous wounds elsewhere, three of the men recovered after a thorough abdominal operation. Laparotomy was done in one case merely to relieve the atrocious pain from blood and bowel content loose in the abdomen. The man died the next day, but without suffering further pain. Antitetanus serum should be given once a week for three weeks if there are still projectiles left in the tissues. The bleeding wounds should be attended to first, and if there are several on one limb, the upper one first. Injured joints and bones should be given special attention to ward off complications. Amputation of a limb with several grave wounds does away with multiple sources of shock and almost certain infection. Each one of these *polyblessés* cases is a new problem in itself, and it takes courage to attempt the impossible, knowing that the outcome at best will probably be vicious stumps or badly healed wounds.

36. **Secondary Suture of Wounds.**—Ferrari and Delotte analyze their experiences with the Carrel and other methods for preparing a wound for suture. They have learned never to suture a wound that looks bad, even if the bacteriologic findings are favorable. The findings would not be so favorable if every spot of the entire area of the wound could be tested. On the other hand, when the wound looks good and there seems to be a good cellular reaction, they do not hesitate to suture even with five or six diplococci to the field. They estimate the cellular reaction by the number of blood cells that are not polynuclear whites, and they feel safe in suturing when from 15 to 30 per cent. of the leukocytes are mononuclears. They suture without draining or with only a filiform drain, ready to clip one or two of the hairs if need arise in the next few days. In five cases they preceded the suture with an intravenous injection of a polyvalent serum against the agents of inflammation and suppuration. The suture healed smoothly in each case. The main thing in suturing is not to leave any of the walls not in contact; any spaces left are liable to fill up with blood. The hematoma is the greatest and most frequent danger, and hence we cannot be too careful in insuring hemostasis. Fever the same or the following day after suture is often due merely to hematoma, which can be easily evacuated, and healing proceeds undisturbed, especially when the cavity is rinsed out with ether poured in through the drains or between the stitches. The other dangers are the cutting through of the suture threads where the skin is too tender; and gangrene of the flap drawn too tight.

37. **The Nephritis Service.**—The soldiers with pathologic albuminuria are sent to the service arranged for this purpose by Laubry and Marre, and they describe the methods for diagnosis and treatment, with the outcome, in 200 cases of nephritis. Each man has his "renal certificate" on which are recorded the curve of urine output, the chemical and microscopic findings in the urine, the findings in regard to chlorids, with and without alimentary tests, the urea content of the blood, and the Ambard coefficient, also the response to the methylene blue test of the permeability of the kidney, and the arterial pressure. If the man recovered enough to return to the ranks, the regimental medical officer was sent confidentially a copy of this *fiche rénale.* If the man was unfit for duty, it served as a basis for his discharge from the army.

41. **Surgical Conference.**—Some of the conclusions at this third conference were mentioned in these columns May 18, p. 1520. There were ten American army medical officers present, seven British, seven Belgian, eight French, two Japanese and one Canadian, Italian, Portuguese and Serbian. This bulky volume of 365 pages with twenty-four plates reproduces the communications presented by the various speakers, with the discussions. A fourth conference has been held since, and the conclusions adopted are summarized below, Abstract 69.

Archives Mens. d'Obstét. et de Gynécologie, Paris

October-December, 1918, **6,** No. 10-12

42 *Social Problems Affecting the Mother and Child. P. Bar.—p. 273; Welfare Work for Mothers and Infants in Paris District during the War. Id.—p. 275; For Pregnant and Nursing Women in Factories. Id.—p. 287; Repression of Criminal Abortions. Id.—p. 333.
43 The Midwives of France. P. Bar.—p. 385.

42. **Social Problems Affecting the Mother and Child.**—Bar remarks that the war has deprived the medical schools and the hospitals of most of the men devoted to scientific research, while, on the other hand, the tragic events of the war render more than ever necessary the study of medicosocial questions involving the very life of the nation. Hitherto the indifference of too many of the politicians and the neglect by too many officials has left these questions unsolved as of negligible importance. He urges that a systematic campaign must be undertaken against the plagues which are the capital causes of depopulation: syphilis, tuberculosis, alcoholism, voluntary birth control, etc. He then reviews and comments on the discussions held recently in various scientific societies, the Prison Society, the decrees

of the minister of munitions and the laws enacted affecting mothers and infants and prospective mothers, at home and in the factory.

Bulletin de l'Académie de Médecine, Paris

March 19, 1918, 79, No. 11

44 *The Toxicity of Eggs G. Linossier.—p. 237.
45 The Terminal Nerve. A. Nicolas.—p. 250.
46 *Vaccination of Pacific Ocean Islanders against Typhoid.—G. Laroche and Maret.—p. 252.
47 Spontaneous Alteration of Atoxyl. François.—p. 255.
48 *Film Treatment after Mastoid Operation. Daure.—p. 258.

44. **Toxicity of Eggs.**—Linossier remarks that there seems to be a tendency now to disparage eggs as liable to prove toxic under certain conditions, even when quite fresh. He has made a special study of the subject for several years, having published an article on it in 1905. His present conclusions are to the effect that there is undoubtedly some substance in eggs which has a toxic action on certain predisposed persons. The predisposition is often congenital. When it is acquired, it seems to be connected with liver and intestinal disturbance. The toxic substance is probably a toxalbumin, and it is destroyed by heat. All that is necessary is to coagulate all the albumin in the egg, in the yolk as well as in the white. He remarks that the reason why cooked egg seems to be harder of digestion than raw, is because it is digested in the stomach, while the raw egg is passed on undigested, and is not hydrolyzed until it reaches the intestines. He warns against prolonging the action of heat after coagulation is complete, as the harder the coagulation, the more difficult the digestion by the gastric juice. He insists that there are no grounds for denying eggs in liver diseases, but with a tendency to gallstones, it is wiser not to allow more than one egg a day, so as not to increase the cholesterolemia. Well cooked eggs can be allowed with albuminuria, but persons with interstitial nephritis and hypercholesterolemia had better refrain from eggs.

46. **Vaccination of Pacific Islanders Against Typhoid.**—Summarized in Paris Letter, page 1320.

48. **Film Treatment After Mastoid Operation.**—Daure refers to radical petromastoid clearing out of diseased tissue, the aftercare of which has always been a tedious and risky business. The film treatment simplifies it very much and reduces the risks. The cavity is half filled with the paraffin mixture at 70 C.; a cord is introduced in the midst of the paraffin. It is left undisturbed for five or six days, and then the solid block of paraffin is lifted out by the cord and a fresh paraffin dressing applied, after the cavity has been dried with cotton or hot air. When the conditions were such as to forbid the film treatment, he applies the Carrel irrigation technic until the field is ready for the film dressing.

Bulletins de la Société Médicale des Hôpitaux, Paris

Feb. 1, 1918, 42, No. 4

49 *Graphic Sign of Abdominal Aortitis. A. Mougeot.—p. 109.
50 *Bradysphygmia. F. Ramond and A. Petit.—p. 111.
51 *Urogenital Complications of Typhoid. G. Faroy.—p. 114.
52 *Test for Quinin in Urine. J. Baur and Reveillet.—p. 119.
53 Purulent Pleurisy from Typhoid Bacilli. Tavernier, Serr and Brette.—p. 123.
54 Hospital Apparatus for Subcutaneous Injections of Quinin. J. Baur.—p. 127.

49. **Pathognomonic Sign of Abdominal Aortitis.**—Mougeot has noticed that the femoral pulse beat at the root of the thigh was felt from a fortieth to a twentieth of a second before the radial pulse beat in cases of abdominal aortitis. With aneurysm of the lower aorta, the femoral pulse lags behind the radial pulse, but with abdominal aortitis the femoral pulse is advanced before the radial pulse. As this finding was constant in the fifty cases of abdominal aortitis tested for this sign, he thinks that it may be regarded as pathognomonic. In all other forms of disease of the aorta, sparing the abdominal portion, the radial and femoral pulse beats are synchronous.

50. **False Bradycardia.**—The pulsus bigeminus with extrasystoles was only 44 but the heart beat was 88, when the young man was reclining. When sitting up or standing, the radial pulse and the heart beat were both 80 and regular. In the reclining position the oculocardiac reflex did not modify either, but, seated or standing, both were retarded by eight or ten beats. Epinephrin and atropin accelerated both heart and pulse beat. A nervous origin for the bradysphygmia thus seemed beyond question. But the sympathetic system and not the pneumogastric seemed to be the one involved

51. **Typhoid Genital Lesions.**—Faroy reports three cases of typhoid and paratyphoid orchitis and epididymitis, with urethritis in two of the cases. The onset was sudden, intense pain in one testicle, occurring in convalescence or as defervescence impended. The genital complications subsided completely in eight or ten days without entailing suppuration or atrophy. The urethritis was revealed merely by a purulent drop squeezed out of the passage. There was no history of and nothing to suggest gonorrhea in any of the cases. The urethritis preceded and was probably responsible for the orchitis.

52. **Test for Quinin in Urine.**—An aqueous solution of picric acid added to fluids containing traces of salts of alkaloids, especially quinin, forms a very fine, light precipitate of picrates, causing opalescence or turbidity in the fluid or sedimentation A set of ten test tubes are prepared with normal urine plus progressive amounts of quinin, from 0.01 to 0.10 gm. per liter. To each tube is added 5 c.c. of 1 per cent. solution of picric acid or Esbach reagent. This gives a set of standards with which the turbidity of the urine to be tested is compared. All must be well shaken up at the time, and five minutes contact be allowed. The urine must be free from albumin and other alkaloids, etc. Uric acid crystallizes on the walls of the tube, without causing turbidity.

Journal de Médecine de Bordeaux

March, 1918, 89, No. 3

55 Soldiers' Cemeteries. L. Bosredon.—p. 55.
56 *Acute Nonsuppurating Encephalitis. Creyx.—p. 62.
57 *Pneumococcus Meningitis. H. Mallié.—p. 67.

56. **Nonsuppurative Encephalitis.**—Creyx remarks that what we call meningeal symptoms in reality are not meningeal, as the meninges in themselves are not capable of inducing such symptoms. They manifest their lesions by the reaction in the parts which they inclose. In an acute case described, a young woman had had fever and diarrhea for two weeks and then coma developed, with slight trismus and slight contracture of the arms and exaggeration of the tendon reflexes. The legs were relaxed, the tendon reflexes abolished. There was no Kernig sign nor trace of hyperesthesia or convulsions. Lumbar puncture released limpid fluid under considerable pressure. There was nothing to suggest poisoning, and the temperature kept very high. The woman died the third day after the onset of the coma, and necropsy revealed merely acute encephalitis without suppuration, as the only lesion accompanying the septicemia. The bacteriologic findings were negative, but the examination was not very thorough. The irregularity in the distribution of the lesions entails remarkable variety in the symptoms, very different from the systematic phenomena noted with chronic disease of the nerve centers. The acute encephalitis may subside without leaving a trace, but it usually leaves some definite sclerosis at certain points or in certain fibers, and these acquire a definite character. Acute nonsuppurative encephalitis has been observed in connection with malaria, syphilis, rabies, poliomyelitis and tuberculosis, as well as with streptococcus, staphylococcus and pneumococcus infection. Suppuration is the rule with mixed infection According to the localization of the inflammation, the symptoms are delirium, convulsions and coma, with a diffuse process, but with focal lesions they are localized. The age makes a difference: in the fetus, Little's disease results; in children, cerebral paralysis or symptoms from the sequels of the inflammatory process, possibly typical insular sclerosis.

57. **Pneumococcus Meningitis.**—Mallié found one case of meningitis accompanying pneumonia in 244 cases of frank pneumonia in a camp of German prisoners. In another case there was pneumococcus meningitis without pneumonia, confirmed by necropsy. **Weill** reported in 1915 a similar case in

a child. He regards the pneumonia as merely a habitual episode in pneumococcus septicemia; it is not a local disease like tonsillitis or phlegmon.

Journal de Radiologie et d'Electrologie, Paris

November-December, 1917, **2,** No. 12

58 Electricity in Treatment of Neuralgia. L. Delherm and M. Chassard.—p. 689.
59 Roentgen Examination of Fracture of the Fore Arm. F. Masmonteil.—p. 704.
60 Bone Anomalies; Two Cases. J. Pierquin.—p. 710.

Presse Médicale, Paris

April 4, 1918, **26,** No. 19

61 *Phrenopericarditis. F. Trémolières and L. Caussade.—p. 169.
62 Warping of the Ulna after Fracture. F. Masmonteil.—p. 170.

April 8, 1918, **26,** No. 20

63 *Study of Uremia. F. Legueu and H. Chabanier.—p. 177.
[illegible] *Cancer of Rectum. M. Desmarest.—p. 180.
5 Epinephrin and Pituitary Treatment of Asthma. R. Bensaude and L. Hallion.—p. 185.
66 Present Status of Diverticulitis. M. Romme.—p. 186.

April 11, 1918, **26,** No. 21

67 *Gastroptosis. V. Pauchet.—p. 189.
68 *Neuro-Arthritism with Thyroid Instability. L. Lévi.—p. 191.
69 *The Fourth Interallied Surgical Conference.—p. 193.

61. **Adhesions Between Pericardium and Diaphragm.**—The functional disturbance is a set of symptoms suggesting angina pectoris. The physical symptom is the disappearance of the apex beat. The roentgen symptom is a shadow at the left side where the heart and diaphragm are soldered together. This triad characterizes adhesive phrenopericarditis. Trémolières and Caussade have encountered twenty cases of this kind. Although the angina pectoris symptoms may be distressing at times, yet they never had serious consequences in their experience.

63. **Urea Content of the Blood and Ambard's Constant.**—Legueu and Chabanier discuss the significance, the clinical application and the import for the prognosis of azotemia and the ureosecretory constant according to Ambard's formula. They have simplified this formula to the coefficient found by dividing the urea content of the blood by the square root of the urea content of the urine brought up to twenty-five per thousand. This coefficient in normal conditions is 0.070. Experience has confirmed, they reiterate, that this coefficient is an absolute and quantitative index of the secreting power of the kidneys. It insures a precision previously unattainable. A dog was submitted to the various tests of kidney functioning with methylene blue, etc. Later the dog was returned to the same investigators for repetition of the tests, without informing them that one kidney had been removed. This was not discovered until the Ambard formula was applied, but this revealed the exact proportion of renal parenchyma that was missing.

Death occurs in nephritis usually during an acute exacerbation of the azotemia. An acute exacerbation may be occasioned by any infectious or toxic state or may follow any operation anywhere on the body. Death from acute azotemia is often mistakenly ascribed to congestion or embolism of the lung or other cause. The organism is producing urea in excess while the kidneys are excreting less than usual. The oliguria may not be extreme, but still the azotemia may reach a fatal height, and here again the Ambard formula reveals the true state of affairs. *It is particularly useful when applied to the urine from each kidney separately when it is a question of nephrectomy.*

64. **Cancer of the** **ectum.**—Desmarest gives an illustrated description of the me hod for removing a cancer in the lower half of the rectum w thout loss of the sphincter of the anus. He works through o incisions, one transverse, across the perineum, and one ongitudinal, over the coccyx. He has [illegible] is method twenty-one cases, and the interval of away with [illegible] since th first case enables him to speak con- infection. Ea the super r advantages of this technic. There problem in itselırrence ir only two of his first series of seven- sible, knowing tl [illegible] the one of these soon after the operation. vicious stumps or l dly come, with the natural anus functioning, shows the superiority of the method, he says, over others which require an artificial anus.

67. **Gastroptosis.**—Pauchet emphasizes that gastroptosis must not be considered a purely local lesion, such as can be cured by an operation. There is always a complex pathologic condition, insufficiency of the glands in the abdomen (liver, suprarenals, etc.); degeneration of tissues, and unstable nervous system. Persons with gastroptosis may have to be treated for months and years to correct each of the disturbances depending on these various causes, with liver and suprarenal organotherapy, physical culture, outdoor exercise, psychic reeducation, massage and general hygiene. It requires a kind of abdominal orthopedics with the cooperation of the surgeon, the physician, the masseur and the physical culture trainer. He describes the operation he has found most effectual to bring the stomach and transverse colon into their proper place. He sutures the transverse colon to the lower margin of the stomach, and then draws up the stomach into the proper shape and size with half a dozen parallel threads quilted superficially the length of the anterior stomach wall, stopping short of the pylorus region and greater curvature. The threads are brought out through the skin and the field is painted with iodin to induce adhesion.

A bandage often gives great relief but it has to be fitted at first under the roentgen rays, and be put on while still reclining in bed each morning. In Pauchet's experience with thirty operative cases, in six the operation alone failed to give permanent relief from all the disturbances. They yielded only when orthopedic principles were applied. Then the patients gain in weight and the general condition improves while the pulse in the erect position is no longer abnormally fast (80 instead of 120 in Leven's case). Gastroptosis is often mistaken for salpingitis if the colon is sensitive, or for wandering kidney if the cecum is distended and painful; for gastric ulcer if there is pain at once after eating, and for chronic appendicitis if there are pains in the iliac fossa. The splashing sound may suggest simple dilatation of the stomach, and if all these can be excluded then a purely functional nervous trouble is sometimes assumed. Operations have often been done on these mistaken diagnoses. Sometimes they merely augment the patient's discomfort and sufferings. Differentiation is based on the history of the case and roentgen examination standing and reclining. The bismuth shows the site and degree of the reducible or permanent kinks in the digestive tract.

68. **Instability of the Thyroid with Neuro-Arthritism.**—Lévi describes the case of a woman of 31 who has presented neuropathic symptoms for many years as well as migraine, recurring lumbago, abdominal ptosis, nasal asthma and varicose veins. Attacks of local congestion in various organs also occurred at times in the lungs or joints or elsewhere, and she had an anaphylactic crisis after injection of horse serum. There were also symptoms of exophthalmic goiter at times while at others the symptoms suggested thyroid deficiency. The thyroid gland varied in size at different times, and Lévi ascribes the whole train of symptoms to this instability of the thyroid gland. This assumption was confirmed by the regulating effect of thyroid treatment. The attacks of hyperthyroidism develop on a basis of chronic hypothyroidism, and hence thyroid treatment, bringing this basic level up to normal, causes the subsidence of the angioneurotic disturbances. This does not surprise those who have witnessed the subsidence under thyroid treatment of urticaria, Quincke's edema and intermittent hydrarthrosis. This case, as also the benefit from thyroid treatment of this woman's sister with somewhat similar symptoms, confirms the necessity for studying the thyroid functioning when these *poussées fluxionnaires* are noted in any organ.

69. **Conclusions Adopted by the Interallied Surgical Conference.**—This fourth conference was held at Paris in March, and the conclusions adopted on the seven subjects appointed for discussion may be partially summarized as follows:

Transfusion of Blood: This is indicated in the first few hours after the wound in case of grave hemorrhage, but in collapse from gas gangrene it has not seemed to benefit, and in shock the indications for transfusion have not been determined as yet. Later posthemorrhagic anemia does not call for transfusion if the general condition is satisfactory. Donors should be tested for agglutinins and classified ready for use, except in emergency cases; fatal accidents have occurred from agglutination of the blood corpuscles by the donor's plasma, but the danger of this is relatively small and may be disregarded at an advanced post, but strict asepsis is indispensable. Transfusion should not be attempted until the bleeding has stopped. It is important to know the quantity of blood transfused. Tests of blood kept for several days have been satisfactory. This method will render great service at the advanced posts during intense military activity. Good results have been obtained with citrated blood, blood drawn into a paraffin ampule, and blood drawn into a syringe.

Trench Foot: Wet cold, long standing or crouching, and secondary infection are responsible for this pathologic condition. It affects soldiers from hot countries more than Europeans, and youth, hyperidrosis and a preceding attack are predisposing factors. The Belgians ascribe the rarity of trench foot in their army to the fact that they have discarded strapped leggings. With preventive treatment, trench foot becomes very rare: facilities for keeping the feet dry and warm, frequent change of units in wet regions, and daily greasing and massaging the feet; changing the shoes, with surveillance not to allow constriction from the puttee straps. Treatment should include a tepid bath and soaping of the foot with a boric acid and camphor soap every two or three days, wrapping it up daily in a large moist boric acid and camphor dressing. Phlyctenas should be opened and if there are eschars they should be merely scarified not to make them bleed but to let the medication act on the subjacent tissues. The eschars should be left to drop off of themselves. No operation should be done unless the surgeon's hand is forced by the general condition except finally to regulate vicious stumps. But preventive tetanus antitoxin should be given every week until healing is complete.

Wounds of the Pelvis: Comminuted fractures of the crest of the ilium require extensive trephining. An intraperitoneal wound of the bladder or rectum requires a laparotomy and suture, and with a suprapubic, extraperitoneal bladder wound, a primary suture of the bladder is in order. With a wound of the side or the base of the bladder the drainage is sufficient and, later, a retention catheter aids in the healing of the urine fistula. Primary emergency cystostomy is required only when there are retention and progressive infiltration around the bladder, or severe hematuria or a foreign body in the bladder. Secondary infection calls for cystostomy with drainage. With an extraperitoneal wound of the rectum, open up the wound, tampon the hole in the bladder, and keep the man constipated. When both bladder and rectum are injured, a retention catheter, ventral decubitus, and micturition in knee-chest position, favor the spontaneous healing of the bladder-rectum fistula, after clearing out the extravesical track of the projectile.

Pseudarthroses: The inevitable cause of pseudarthrosis after a war fracture is the primary destruction of part of the diaphysis. With working men we should aim to secure direct ankylosis between the femur and tibia, with or without an interposed graft. For men following a sedentary occupation, a pseudarthrosis permitting flexion has greater advantages. Either of them is better than an artificial leg. No operation should be done for pseudarthrosis until the skin wound is completely healed and the inflammation subsided. A number of further points for management of pseudarthrosis of elbow, etc., are given in minute detail. A combination of a metal plate screwed to the bone and a bone-periosteum graft has given very fine results in simple pseudarthrosis or when there is loss of substance in a limb with a single bone.

Wounds of the Foot: The integrity of the sole is extremely desirable, and reunion by primary intention particularly important here, even if certain bones have to be sacrificed to permit this. All operations on the anterior tarsus seem to give favorable results if there is no complication from the cicatrix or from the condition of the articulations. Vicious attitudes of the feet can be ameliorated by severing or transplanting tendons if the articulations are free. Partial resection of the calcaneum gives less unfavorable results if the foot is kept at a right angle throughout the treatment. On the whole, operations on the posterior tarsus often cause graver functional disturbance than disarticulation or a Syme amputation. Depage stated that in case of suppuration of the articulations of the tarsus, persisting in spite of astragalectomy, the suppuration can be conquered by severing tendons and ligaments enough to turn the foot forward or inward (*renversement du pied en avant ou en dedans*), keeping it with a bandage in this position, thus favoring disinfection of the focus. The foot can be restored to normal position in one or two weeks.

Osteosynthesis for Fractures: Primary osteosynthesis is a difficult operation which exposes to grave complications. It should be reserved for specialist skill. Apparatus give such good results now that it is rarely called for outside of pseudarthrosis cases. Temporary osteosynthesis with plate and screws is preferred.

Correspondenz-Blatt für Schweizer Aerzte, Basel

March 16, 1918, **48**, No. 11

70 Short Race as Test for Heart. J. Karcher.—p. 337.
71 Mobilization Psychoses in Swiss Army. F. Uhlmann.—p. 345.

Policlinico, Rome

March 24, 1918, **25**, No. 12

72 Economy in Dressing Materials. G. F. Novaro.—p. 269.
73 Detection of Picric Acid Jaundice. A. Scala.—p. 271.
74 Aneurysm of Femoral Vein Simulating Inguinal Hernia. C. Marchesi.—p. 277.

Rivista Critica di Clinica Medica, Florence

March 23, 1918, **19**, No. 12

75 *Pernicious Anemia plus Lymphadenosis. B. Frattini.—p. 133.
76 Rhythmic Spasms of Face Muscles. L. Siciliano.—p. 137.

75. Pernicious Anemia Plus Lymphadenosis.—The previously healthy soldier developed progressive pernicious anemia which kept up for months and then passed into lymphatic leukemia which soon proved fatal, with lymphadenosis. It had evidently been a case of leukemia from the start, the pernicious anemia findings being its earliest manifestation. Until the necropsy revealed the typical findings of lymphatic leukemia, the lymphadenosis seemed to have been merely superposed on a progressive pernicious anemia.

Prensa Medica, Buenos Aires

Feb. 10, 1918, **4**, No. 25

77 Classification and Treatment of Inguinal Hernias. E. Corbellini.—p. 339.
78 *Nonoperative Reduction of Aneurysm. T. Castellano.—p. 347.
79 Fibroma in Maxillary Sinus with Calcareous Degeneration. E. Galiano and J. Layera.—p. 349.
80 Normal Beef Serum in Treatment of Anthrax. J. Penna and others.—p. 350. Continuation.

78. Medical Cure of Aneurysm.—Castellano's patient was a man of 50 who for a year had been having pain in the middle portion of the right supraclavicular region. Then he noticed a tumor, which rapidly increased in size and proved to be an enormous aneurysm of the trunk of the brachiocephalic artery. The man was kept absolutely quiet in bed, on a milk-vegetable diet, without much liquid, and he was given once a week a subcutaneous injection in the flank of 60 or 40 c.c. of a 2 per cent. solution of gelatinized serum. As the Wassermann reaction was positive, mercurial treatment was given at the same time. Improvement was rapid and pronounced. The only reaction to the injections was local pain, slight rise in temperature and transient leukocytosis. The aneurysm subsided to a clinical cure. The absolute repose in the horizontal position seemed to be an important element in the treatment. Twenty injections were made in this case.

Revista de Medicina y Cirugia Practicas, Madrid

Feb. 14, 1918, **42**, No. 1494

81 Effect of Electricity on Lacteal Secretion. J. S. de Figueroa.—p. 161.

Feb. 21, 1918, **42**, No. 1495

82 *Pathology of Skin and I[illegible]logy. D. E. de Oyarzabal.—p. 193.

82. **Relations Between the Pathology of the Skin and Internal Pathology.**—De Oyarzabal discusses here the connection between liver disease and the color of the skin. His clinical observation has confirmed the existence of jaundice in certain cases when the liver seemed to be normal. The jaundice was evidently due to destruction of blood corpuscles and release of their pigment, but he thinks there is much evidence that it requires passage through the liver before it can induce jaundice. The amount of bile formed in the liver increases with the supply of the substances out of which the liver produces the bile. The pressure in the bile is normally less than the blood pressure, but if circumstances conspire to increase the bile pressure above that of the blood, then the bile passes into the blood. These data sustain the contention of Naunyn and others that there is no directly hematogenous jaundice; it is always the result of reabsorption. When the liver becomes atrophied and the circulation through it impeded, ascites develops unless the collateral circulation is sufficiently developed. A network of varicose veins over the region is a favorable sign, as this testifies to ample collateral circulation. We should aim to induce it and increase it; this is accomplished by tapping the ascites. This relieves the veins from the compression by the ascitic fluid, and the veins then dilate and assume the task of the collateral circulation. In regard to xanthoma and xanthelasma, he says that the connection between them and jaundice is not very clear or close. The frequency of jaundice and the rarity of the others, and the existence of xanthoma with apparently normal liver, seem to testify against such connection. On the other hand, cholesterol crystals have been found in xanthomas.

Semana Medica, Buenos Aires

Jan. 31, 1918, **25**, No. 5

83 *Prophylaxis of Plague. J. B. Valdes.—p. 121.
84 **Crystals in Blood and Date of Death.* B. Valverde.—p. 124.
85 Hygiene of the Eyes. P. B. Ferro.—p. 130.
86 Campaign against Social Plagues in Argentina. E. R. Coni. —p. 135.
87 Mutations of Tubercle Bacilli. M. R. Castroman.—p. 140.

83. **Prophylaxis of Plague.**—Valdes is chief of the public health service at Rosario, and gives the regulations enforced there. A squadron is entrusted with the business of free deratization and disinfection of premises where plague is found, and no building can be erected or remodeled without an isolating cement floor, at least 5 c.c. thick, in the basement. These measures are enforced for warehouses and shops as well as dwellings. Some rats examined for plague were found with echinococcus cysts or streptothrix tumors.

84. **Crystals in the Blood as Determining Date of Death.**—Valverde reproduces thirteen microphotographs showing the varying aspect as time passes of certain characteristic crystals found in blood after death. These crystals are fragile and colorless; and their size is proportional to the interval since death, up to thirty-five days, and then they disappear. They are dissolved by acids but are not modified by bases or alcohol, and do not dissolve in water. They turn black under a 5 per cent. solution of silver nitrate, and blue under potassium ferrocyanid. These crystals are always found in putrefying blood, and sometimes even in aseptic blood. They appear the third or fourth day or even earlier in summer, the fifth or sixth day in winter. Their disappearance by the thirty-fifth day aids in determining the date of death. The crystals were found the fourth day in blood drawn from a living person, but a dried spot from a drop of his blood did not show the crystals till the fifteenth day. They have straight sides but coffin-like ends, and increase in size from less than one twelfth to over half the diameter of the microscopic field.

Siglo Medico, Madrid

Feb. 9, 1918, **65**, No. 3348

88 Needed *Reforms in Medical Course.* V. *Prieto.—p.* 102.
89 Morphology and Movements in Vitro of Blood Corpuscles. F. Mas y Magro.—p. 103. Continuation.
90 Treatment of Acute Psoriasis. Sicilia.—p. 106.

Feb. 16, 1918, **65**, No. 3349

91 *Syphilis Acquired after Conception. D. E. M. Villapadierna. —p. 122.
92 *Stones in the Ureters. P. *Martin.—p.* 124.

91. **Postconception Syphilis.**—Villapadierna says that if the child shows no signs of syphilis while the mother gives a positive Wassermann reaction, the question whether the child should be given to the mother to nurse should be decided only after serious consideration of the case. Several cases are described which show that the probability is that the new-born child is infected, even though it may show no signs of syphilis, even at necropsy.

92. **Concretions in the Ureter.**—Martin reports three cases, in a girl of 9, a boy of 11, and an adult. The diagnosis was made with the roentgen rays or cystoscope, and as the stones were small, they were dislodged and expelled by promoting the diuresis. He insists that morphin not only relieves the pain from an impacted stone but aids directly in its expulsion, as it relaxes the spasmodic contraction which is increasing the pain, and the increased pain induces greater contraction. Morphin breaks up this vicious circle, and as the spasm relaxes the stone drops down.

Vida Nueva, Havana

April, 1918, **10**, No. 4

93 *Duodenal Alimentation in Treatment of Gastric Ulcer. F. Pages and J. A. H. Ibañez.—p. 132.
94 *Oxygen in Disease of the Stomach. R. G. San Martin and P. A. Barillas.—p. 137.
95 Necessity for Propaganda for Cremation C. Hoyos.—p. 140.
96 Prophylaxis of Venereal Disease. J. E. L. Silvero.—p. 142; R. B. Agramonte.—p. 143.

93. **Duodenal Alimentation in Treatment of Gastric Ulcer.**—Pages and Ibañez relate that this method has proved extremely successful in their hands. They describe here four typical cases in detail out of their total seventy-two cases in two years. They introduce the tube into the duodenum at night and feed with 150 gm. of tepid milk daily, then 200 gm., but never up to 300 gm., as this amount cannot be borne with comfort. Yolks of eggs are given, up to four a day. A saline injection is given after each feeding. The relief of pain is the first effect noted. The success was complete in all but two cases, one complicated with stenosis of the pylorus and one with actual and severe Reichmann's disease. With inoperable gastric cancer, some of the patients were relieved of pain and the general health improved under the duodenal feeding, but in others it not only failed to relieve but brought on gastric hemorrhage, sometimes fatal.

94. **Oxygen Treatment of Stomach Disease.**—By means of a stomach tube and generator, the stomach walls are treated with oxygen, and in the forty-eight cases reported the pain, hypersecretion and pylorospasm all subsided. The beneficial effects are most plainly evident in cases of long standing stomach disease, rebellious to the ordinary measures. In four of their cases the stomach symptoms had returned after a gastro-enterostomy, but were banished anew by the oxygen treatment.

Russkiy Vrach, Petrograd

Dec. 2 to 30, 1917, **16**, No. 48-52

97 *Surgical Shock. N. A. Kruglevsky.—p. 577.
98 *Diaphragmatic Hernia from War Wound. I. E. Hagen-Torn.—583. Commenced in No. 43, p. 554.
99 Differentiation of Chronic Aortitis. K. M. Rutkevitch.—p. 587.
100 Buried Goiter. M. A. Tchalusoff.—p. 589.
101 Action of Alkaline Metal Salts on the Vessels of Internal and Peripheral Organs. M. I. Gramenitzky.—591. Commenced in No. 33, p. 493.
102 Embryology in the Medical Schools. K. M. Yakhontoff.—p. 597.
103 Preparation of Giemsa Stain. A. I. Savatieff.—p. 598.
104 *The Ferments in Infectious Diseases. A. S. Solovtsova.—p. 601. Commenced in No. 43, p. 569.
105 Tropical Ulcer in Russian Soldiers. B. A. Bolter.—p. 605. Commenced in No. 33, p. 504.
106 War Wounds of the Eyes. R. A. Kats.—p. 606. Conclusion.

97. **Surgical Shock.**—Kruglevsky reviews what has been published on this subject by Crile, Seelig and Lyon, McNee and others, and endorses the general view that surgical shock is a complex process. The various phases of it include the increased ventilation of the lungs—hyperpnea, entailed by irritation of the respiratory center—and the reduced tension of carbon dioxid in the arterial blood—acapnia. The acapnia entails arrest of the respiration—apnea, which lasts until

normal CO_2 tension is restored. In case of very great losses by way of the increased ventilation of the lungs, the reserves of oxygen may be exhausted, and this entails death of vital organs. The insufficiency of O_2 entailed by apnea in each case induces a certain asphyxia of the tissues, accompanied by formation of nonvolatile acids—acidosis. The acidosis of the blood and tissues deranges the venopressor mechanism, in consequence of which filtration, diffusion and osmosis, exceeding the limits of physiologic functioning, draw out from the blood the greater part of its plasma, thus inducing acute oligemia and stagnation of the blood corpuscles in the small arteries. Thus death in all the aspects of surgical shock occurs with the manifestations characteristic of shock from hemorrhage.

The best means to ward off shock is by inhalation of O; for this he prefers Volhardt's technic. Injection directly into the blood of physiologic salt solution is useless in shock because this solution is unable to restore the osmotic tension in the blood and tissues, and hence does not diminish the stasis. Injection into the blood of a hypertonic solution of cooking salt reduces the extravasation of the plasma, but it has to be done in time. He adds that excision of the group of muscles involved is the best means for warding off shock from gas gangrene.

98. **Diaphragmatic Hernia from War Wound.**—Hagen-Torn concludes from his own experience and analysis of the literature that the possibility of rupture of the diaphragm and development of a hernia through it should always be borne in mind with a firearm wound in this region. It must not be forgotten that the clinical picture of diaphragmatic hernia refers to extreme cases, with protrusion of the stomach into the pleural cavity. In the majority of cases, however, with firearm wounds there is not enough of an opening for this; only the omentum and with it a loop of small intestine, slide into the chest cavity. The signs and symptoms from this form of hernia are less distinct, and they can be detected only by repeated careful examination of the patient. The roentgen rays are of great assistance in the differential diagnosis in certain conditions. A laparotomy besides the thoracotomy is required in some cases. He reiterates in conclusion that in perfecting the measures for differentiation of and for operating on diaphragmatic hernia, we must not forget that operative measures should be applied at once, without waiting for the appearance of signs of strangulation of stomach or bowel. He gives some roentgenograms taken with the patient lying prone and in others reclining on his back; the changes in the shadow with change of position are instructive. Grosser in 1899 had compiled 433 cases of diaphragmatic hernia, but most of them were found only at necropsy. Among those diagnosed during life, in nearly all the stomach was included in the hernia. No case is on record like the one Hagen-Torn reports in detail in which merely the omentum and a loop of small intestine formed the contents of the hernia, diagnosed before the operation. The patients do not complain of severe symptoms, the traction on the omentum, etc., being comparatively slight. The strangulation of the loop of small intestine may occur at a point where the bowel is comparatively less sensitive. These factors were combined in his case, so that he long hesitated before operating. Only his tenacious desire to get at the explanation of the cause of the vague pains experienced by the patient led to repeated examination and final correct interpretation of the findings, and successful operation.

104. **The Ferments in Infectious Diseases.**—Solovtzova here concludes her extensive study of the ferments in various infectious diseases, and especially their connection with the crisis. A number of diagrams and tables are given for comparison of the findings in respect to proteose, amino-acids, lipase and the protein split products, according to Sørensen, in the urine in relapsing fever. They show that as the temperature falls at the crisis, in relapsing fever, the proportion of proteolytic ferments is increased as a rule. The amount of the split products is reduced. The artificial crisis induced by intravenous introduction of drugs forms the exception to the rule, as with this the split products accumulate in the blood. The amount of amino-acids in the urine gradually increases, beginning with the attack and through to the falling temperature of the crisis; at the time of the crisis itself it jumps suddenly still higher. With the artificial crisis, this sudden upward jump is delayed and does not occur till the day after the crisis. Negative findings, or the absence of proteose, is observed only with a very severe crisis or unfavorable termination of the disease. Leukocytosis is observed at the crisis, but she found no morphologic changes in the blood. The findings with lipase are conflicting; generally it increases toward the crisis. Antitrypsin shows a reduction with the natural crisis and a rise with the artificial. The fall of the temperature at the crisis, she declares, is dependent on the massive appearance of the split products in the blood. With relapsing fever the drop in temperature at the crisis is dependent on the massive destruction of the spirochetes and—in all probability—on the disintegration of their bodies by the ferments of the organism. The ferments (toxins) generated by the spirochetes of relapsing fever evidently have little affinity for the cells of the organism. The most important cause of the favorable or unfavorable course and issue of infectious disease in human beings is the condition of and the relations between the ferments of the organism and the degree of affinity between them and the infecting agent.

She has previously published a similar study of the ferments in typhoid fever, and on the influence on the temperature of parenteral injection of albumin. She compares here her results with those of Vaughan, Joblin, Petersen and others, as published in The Journal and the *Journal of Experimental Medicine*.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

March 9, 1918, 1, No. 10

107 *Epidemic Meningitis. G. Kapsenberg.—p. 669.
108 *Albuminuria in Schoolchildren. J. M. Hamelberg.—p. 679.
109 Present Status of Asthma. S. Brandes.—p. 686.

107. **Contagiousness of Meningitis.**—Kapsenberg remarks that the meningococci are not restricted to the meninges but invade the nasopharynx which is open to the outer world, and thus every person with the disease is likely to spread the infection even after recovery. In the first week of the disease the cocci are found in the nasopharynx in from 54 to 78 per cent. of cases. But as the sick stay in the house and as there may not be susceptible persons in their immediate environment, other cases seldom develop directly from them. But the persons in the environment harbor the cocci, and as these healthy carriers go in and out they are liable to encounter some susceptible persons among the large numbers they meet, and the disease develops in these susceptible contacts. He cites various data along these lines, especially reports by Ostermann in 1906, among others, showing 70 per cent. of carriers found in the contacts; Bruns, 36.7 per cent. in 609 examined; and 10 per cent. in Kapsenberg's own experience last year among forty-one examined. It is possible that repeated reciprocal infection of each other by the sound carriers may induce conditions in one or more of them so that they finally acquire susceptibility, and thus develop the disease after having been merely a healthy carrier for some time. He emphasizes the necessity for seeking out all the carriers in the environment. When possible, they should be isolated. As a rule, their carriership is transient. But in any event they should be warned of their danger for others, and instructed how to reduce this danger to the minimum by controlling their sneezing, coughing, the use of the handkerchief, and other opportunities for droplet infection of others. But the vital thing is to detect the persons who are permanent carriers. They are the main source for the perpetuation of the disease, and if they can be discovered and rendered harmless, a great stride will have been made toward conquering the disease.

108. **Albuminuria in Schoolchildren.**—Hamelberg found albuminuria in nine of sixteen boys after a class in gymnastics while there was no albumin to be found in their urine on a day when there was no gymnastic class. This led to examination of the urine of 401 boys and 311 girls in the school. The examinations were made before and after the gymnas-

class and, when albuminuria was found, the child was ordered to bring morning urine for examination. The children were all of the upper grades in the school. Albuminuria before the gymnastics was evident in 8 per cent. of the boys and 24 per cent. of the girls; after gymnastics, in 14 per cent. of the boys and 33 per cent. of the girls. In both categories the percentages grew higher the older the children; among the girls of the sixth grade and higher grades the proportion was 49 per cent. This albuminuria of adolescents is generally extrarenal, and Hamelberg applied the postural test to all the children with albuminuria to decide to what extent lordosis was a factor. He had the children stand ten minutes in the military attention position, or kneel for ten minutes with the trunk held straight, or lie prone on the ground and lift themselves up by their hands on a bench placed close to them. This last exercise induces extreme lordosis and showed albuminuria in fourteen of thirty-four children who had given negative findings with the two other tests.

He remarks parenthetically that it took skilful suggestion sometimes to get the children to void urine repeatedly at such short intervals, but he accomplished it. The trunk of the child was always bare during these exercises; this enabled oversight not only of the lordosis but of the general nourishment, etc. The findings as a rule confirmed Jehle's statements that the lordosis which induces albuminuria is exclusively that in the upper portion of the lumbar spine, but Hamelberg does not agree with him that lordosis in this region is the sole explanation of albuminuria in children. Chemical tests show a difference in the albumin found in different cases. Fatigue is evidently a factor in some cases. To exclude fatigue, he had some gymnastic exercises done with the arms alone as the children lay on the floor. He draws no practical conclusions from this research except that the children who present this extrarenal albuminuria are the very ones who most need gymnastics and other measures to strengthen them. Fully 90 per cent. were frail children among those with lordotic albuminuria, and 70 per cent. of those with albuminuria in general; only 10 per cent. of the total were lively healthy children.

Hospitalstidende, Copenhagen

March 13, 1918, **61**, No. 11

110 *Fracture of Calcaneum. T. Eiken.—p. 321.
111 *Tests for Sugar Content of Blood. W. Leschly.—p. 326.
112 Present Status of Five-Day Fever. O. Thomsen.—p. 332.

110. **Isolated Fracture of Anterior Process of the Calcaneum.**—Eiken's patient was a young woman who twisted her foot in dancing; as she remembered, it was in supination. The foot was treated with bed rest and massage, but did not improve. She applied for treatment to five or six different physicians, and each treated her for the assumed sprain, or tendon or nervous trouble. She was up and about and even took part in dancing, but there was always pain in the foot, gradually increasing. Finally roentgenoscopy revealed the cause of the disturbances in an isolated fracture of the anterior process of the calcaneum at the point where there had been tenderness. There had been no swelling, according to her testimony, at any time. The foot could be moved freely except that rotating movements increased the pain, which then spread upward along the Achilles tendon. The fracture seemed to involve both the anterior articulation and the calcaneocuboid. A plaster cast was applied, with the foot at a right angle, for twenty days, with elevation for six. Roentgenoscopy showed considerable callus in three weeks. Crutches were then allowed and in four days the patient was walking with a cane, and there was only slight pain in walking and no tenderness except along the flexion tendon. This rapidly subsided and the girl was soon playing tennis and dancing. This is Eiken's fourth case of this fracture, but is the only one in which the fracture must have occurred from traction by the ligament. The fact that there was no dislocation of the fragment explains the comparatively slight disturbances. The case emphasizes the importance of early roentgen examination in all cases of severe sprains, even when no sign of fracture can be detected otherwise, especially when the injury occurred along the longitudinal axis. The continued use of the foot in this case kept the fracture from consolidating, and serious disturbance might have resulted as after two months of this there were no signs of healing. Hence the prompt healing under rest in a cast for twenty days was particularly striking.

111. **Comparative Determination of Sugar Content of Blood.**—Leschly applied to forty persons parallel tests with the Myers and Bailey technic and Bang's uranyl method for determination of the sugar in the blood. The results are tabulated with other metabolic findings. Only slight differences were found with the two technics. As the American method gives the sugar content in 100 c.c. of blood and Bang's in 100 gm. of blood, this is equivalent to the latter giving constantly 5 per cent. higher values than the former. As the solutions used in the Myers-Bailey keep well, this seems to be, he says, the preferable method when the test is to be made only occasionally. He adds that Bang's uranyl method is an improvement over his original technic, as this removes the iodin-binding substances. Leschly's research confirms that from 0.100 to 0.105 is the normal sugar range in the blood.

Hygiea, Stockholm

March 30, 1918, **80**, No. 6

113 *Nasal Reflex Neuroses. A. Hofvendahl.—p. 321.
114 Glioma in Optic Nerve of Child. E. Rietz.—p. 344.
115 Cystosarcoma of the Mamma. H. Westermark.—p. 352.

113. **Nasal Reflex Neuroses.**—Hofvendahl says that experimental research has apparently shown that drugs and gland extracts which increase the tonus in the sympathetic nervous system modify the blood picture in the direction of neutrophils aneosinophilia, while those that increase the tonus in the cranial and sacral autonomic nerves (which may be designated as the parasympathetic system. It includes more than the vagus), modify the blood picture in the direction of mononuclears eosinophilia. The parasympathetic nerves in whatever organ they are found respond always alike with paralysis to atropin and with stimulation under pilocarpin. The sympathetic system, on the other hand, is not influenced by these but responds promptly to epinephrin and cholin. Hormones from the ductless glands and bacterial toxins are liable to induce similar contradictory effects on the sympathetic and the parasympathetic systems. Bronchial asthma is usually preceded by a copious watery discharge from the nose (overstimulation of the parasympathetic system) and swelling of the interior of the nose (irritation of the vasodilators which belong to this system), while the transient improvement under atropin testifies that this parasympathetic system is temporarily paralyzed by this drug. In three of eleven typical cases of nasal asthma, tuberculous toxins were evidently responsible for the irritation of the parasympathetic system and eosinophilia. This nasal neurosis sometimes long precedes other appreciable manifestations of tuberculosis. Hofvendahl found vasomotor disturbances in the nose in 10 per cent. of 500 tuberculous persons in the first and second stages of the disease. Thorough examination of the whole body is indispensable in cases of nasal neuroses. The sympathetic parasympathetic balance in such persons is easily upset, and this may occur from emotional stress, bacterial toxins, mechanical pressure, odors, pollen dust, etc. There is liable also to be an unstable balance in the endocrine system in such persons, especially the balance between the thyroid and genital glands, with a special tendency to disturbances during transitional periods. The slightest anomalies in the interior of the nose should be corrected in persons with this exaggerated reflex irritability of the nasal mucosa. In several of the cases reported, after removal of a polyp, the tendency to attacks of asthma progressively declined. In one case the nasal asthma first developed under a course of digitalis treatment and it subsided under atropin. Toxic action from the digitalis seems to have been responsible for the nasal reflex neurosis in this case. In one woman of 27 with bronchial asthma and symptoms of hyperthyroidism, they became much exaggerated with the onset of the menses. She sweated profusely during the attacks of asthma. There has been no return of the asthma since resection of a spine and crest which were much enlarged.

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USE OF CORN (MAIZE) AS HUMAN FOOD

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About three fourths of the world's corn crop is produced and consumed in the United States, but considerably less than one tenth of it is used as human food. We produce three times as much corn as wheat, so that only one sixth of the corn crop need be eaten in order to replace, or save, one half of the wheat crop. In fact, the increase of our 1917 corn crop over the three-year average of the period from 1911 to 1913 is 548,000,000 bushels, or the equivalent of three fourths of a normal wheat crop. This extra corn is not needed for animal feeding, since the number of animals has not increased correspondingly. Much anxiety has been felt on account of the large proportion of soft corn, not suitable for grinding, in the 1917 crop; but this and much more will be fed to farm animals in any case. A fifth of the total corn crop or a third of what is suitable for milling, would, if consumed as human food, set free all the wheat needed for our friends abroad and leave enough corn on the farms for the adequate feeding of all the live stock now on hand.

In response to the appeals of the Food Administration, much has already been done by our people in the direction of wheat saving, either by direct diminution of bread-stuffs consumed or by substitution of other grains for a part of the wheat formerly used in bread-making. Of the various grains available as wheat substitutes, corn is so much the most important quantitatively that it has seemed well to study by carefully controlled experiments the value of corn as human food and the practicability of making it a large factor in the diet even of people previously accustomed to only a small and occasional use of corn products.

In a series of experiments on healthy men and women, carried out by the department of food chemistry, Columbia University, in cooperation with the New York Association for Improving the Condition of the Poor, special attention has been paid to the question of digestibility and to the nutritive value of the corn proteins. Four experiments were made on as many different subjects, one man and three women, none of whom had been accustomed to any considerable use of corn as food.

The man who served as subject for the first experiment was engaged primarily in studying the value of a simple mixed diet consisting very largely of wheat bread. As much as 600 gm., or more than 21 ounces, of bread were consumed daily with only small amounts of other foods. When the attempt was made at once to replace one third of this bread by an equivalent amount of corn meal, and to consume the latter in the form of mush, it was found that the quantity of mush was too large for the unaccustomed digestive tract already somewhat taxed by the large bulk of bread in the diet. The large quantity of mush was unpalatable and digestive discomfort was experienced. The nitrogen balance was difficult of interpretation because the total intake was diminished; but since the output was diminished to at least an equal extent, it appeared that the corn meal protein was as well utilized by the tissues as was an equal amount of protein from wheat flour.

In the second experiment, a woman, weighing from 59 to 60 kg. (from 130 to 132 pounds) studied the efficiency of wheat and corn proteins by making them prominent in a low-protein diet and determining the intake and output of nitrogen for twenty-three days. The protein intake was kept under 50 gm. per day and was distributed as follows: milk protein, 18 per cent.; wheat protein, 47 per cent.; corn protein, 31 per cent. This involved the consumption of nearly a half-pound of corn meal daily, namely, 200 gm., of which 90 gm. per day were eaten as mush and 110 gm. were mixed with wheat flour and eaten as bread. The subject maintained her weight and general health and energy, working in the laboratory about ten hours per day, notwithstanding the hot summer weather. Twice during the month, however, she experienced digestive discomfort with a tendency to flatulence and slight diarrhea. This was during some of the hottest days of the summer, and it is a question whether the discomfort should be attributed to the corn meal or to the fact that the diet as a whole was too bulky and too starchy for the season. Notwithstanding the small protein intake, nitrogen equilibrium was maintained throughout, indicating a very satisfactory efficiency of both the wheat and the corn proteins.

The third subject consumed 110 gm. of corn meal per day for eight days, after being twenty days on a known diet consisting largely of bread made in part from patent and in part from whole wheat flour. Of the corn meal eaten daily, 85 gm. were substituted for entire wheat flour and used in bread, and 25 gm. were eaten as mush in place of 25 gm. of sugar. The net effect of these substitutions was to leave the protein content and energy value of the diet very nearly unchanged, and the nitrogen balance showed that the tissues made as good use of the corn protein as of the wheat protein which it replaced. The subject felt, however, that the abrupt introduction of about 4 ounces of corn meal per day, in place of more familiar foods, rendered the diet more difficult of digestion.

In all three of these cases, the experimental diets containing corn meal included also considerable amounts of wheat flour. So it is a question whether the slight disturbances or discomfort of digestion should be attributed primarily to the corn meal or rather to the continued use of a bulky and starchy diet, especially as all of these experiments were made in summer. Another question that arises is, whether the corn meal used in these experiments was cooked in such a way as to be digested to the best advantage.

A fourth experiment was therefore planned, in which the amount of corn meal used was still larger, but it was baked in the form of thin scones so that the starch was more uniformly heated than in the baking of ordinary loaves of bread, and was presumably somewhat more thoroughly cooked than when simply boiled with water to a mush. More than 10 ounces (300 gm.) of corn meal were eaten daily, the remainder of the diet consisting of limited amounts of milk, fruit, sugar and fat. The corn meal furnished about half of the calories and three fourths of the protein of the diet. It replaced the whole amount of breadstuffs and cereals ordinarily eaten. Under these conditions there was no disturbance whatever of either appetite or digestion, although the corn meal diet was taken continuously for a month. Determination of the nitrogen balance showed that the maize protein functioned with unexpectedly high efficiency, since the equilibrium was maintained throughout the month with an intake of only 36 gm. of protein per day, of which three fourths was maize protein. The body weight of the subject was practically constant at 56 kg. throughout the month of the experimental diet.

In the last experiment, the corn meal was cooked by being mixed with boiling water and a little fat and salt, and baked in portions three-eighths inch thick for about one hour at low oven temperature to insure thorough and uniform heating throughout. The finished product, while only golden brown on the surface, was well done and crisp to the center. The thorough mastication and admixture with saliva, which the crispness of this form of corn bread insures, is probably a factor of some importance in its digestibility.

It is evident that corn meal, suitably cooked, can be substituted for corresponding wheat products even to an extent equivalent to the whole of the usual consumption of wheat in the dietaries of those who live largely on bread, without detriment to the nutritive value of the diet. When conditions are unfavorable or the subject is particularly sensitive to a change of food, a considerable substitution of corn for wheat may give rise to some discomfort in digestion; but in the three cases here observed, the nutrition of the body tissues appeared to be as well maintained as when the digestive process was entirely regular. It is confidently believed that suitably cooked corn products can enter into the dietary, even of those not accustomed to their use, in large proportion without any effect whatever on digestion. Nor need the palatability of such a diet suffer when even greater quantities of corn products are introduced in varied forms:

Acting on my suggestion as to the feasibility of deriving half the calories of a mixed diet from corn, some of my friends have experimented from the housekeeper's standpoint, with results wholly successful in palatability, in conformity to conventional menus, and in attractiveness to the eye.

Miss Monroe and her colleagues[1] prepared a week's meals, in the total of which 50.5 per cent. of the calories were contributed by corn products. The results of the twenty-one meals served are summarized in the accompanying tabulation.

Corn-wheat yeast bread, with one part corn meal to three parts wheat flour, was served at all meals, when no other bread is mentioned in the table. Corn oil was used in the more highly seasoned, but not in the bland salad dressings. Corn syrup was not substituted for sugar in any case in which substitution would be perceptible either to the eye or to the palate. There was no suggestion of monotony as one looked over and tasted the twenty-one meals in succession, and each individual meal was such as to be highly acceptable to the housewife or culinary expert of conventional ideas and high standards of palatability — not merely to the "scientific enthusiast."[2]

MENUS FOR TWENTY-ONE MEALS

Day	Breakfast	Luncheon	Dinner
1st	Malaga grapes; popped corn with cream; samp spoon bread, orange honey; coffee	Cheese polenta, tomato sauce; buttered peas and carrots; spice cake; tea	Boiled tongue, spinach; creamed hulled corn; hot corn bread; jellied apples; pop corn laces; coffee
2d	Grapefruit; corn flakes and cream; fried corn mush; maple corn syrup; coffee	Corn and chicken soup, corn bread croutons; green peppers stuffed with hominy grits; corn relish, steamed corn bread; maple custard, pop corn drops; tea	Baked cod, sauce tartare; corn meal bouletets; deviled *corn*; watercress salad; corn tutti frutti; coffee
3rd	Stewed apricots; puffed corn, top milk; creamed corn on toast; coffee	Escalloped corn; cider *jelly salad, johnny* cake crisps; cottage pudding, chocolate sauce	Yakhuah, baked corn *croquettes, pear salad*; popped corn pudding; coffee
4th	Crisp cereal with bananas; creamed hominy with hard cooked egg; spider corn cake; coffee	Corn chowder, corn sticks; corn bread salad; corn meal rolls; chocolate; *cornstarch pudding*; tea	Southern chicken pie; pineapple and cheese salad; steamed corn meal pudding with fruit sauce; coffee
5th	Stewed prunes; corn meal mush, cream; creamed herring, browned hulled corn; corn-wheat bread toasted; coffee	Gnocchi di farina gialla; grapefruit and orange salad; Richmond corn muffins; cocoa; spice cookies	Escalloped corn and oysters; asparagus with butter sauce; cabbage and pimento salad; corn meal banana fritters; *fruit sauce*; coffee
6th	Sliced oranges; cornlet griddle cakes, maple corn syrup; coffee	Escalloped hominy and cheese; tomato jelly salad, corn-wheat bread sandwiches; corn *short cake* with peaches; tea	Round steak, Swiss; potatoes in half shell; corn a la southern; corn-wheat rolls; romaine with chiffonade dressing; cornstarch and prune molds; coffee
7th	Baked apple; codfish mush balls; samp with cream sauce; *corn muffins*; coffee	Cream of kornlet soup; cooked corn sticks; corn meal and samp waffles, maple corn syrup; chilled pineapple and orange; cake; tea	Roast chicken, cranberry sauce; candied sweet potatoes; corn oysters; Waldorf salad; corn crackers; cheese; coffee; *corn syrup mints*

In another case,[3] two women, who had had some professional training in food work, but whose duties were such as to preclude the spending of much time on either the planning of menus or the preparation of meals, found that under every-day household conditions and without the adoption or development of any unusual combinations, it was easily practicable to derive more than one third of the week's calories from the products of ordinary field corn. Corn meal, corn flakes, puffed corn, hominy, cornstarch, corn oil, and corn syrup were used. A liberal use of fresh fruits and vegetables was found very helpful to the palatability of the diet, especially on those days on which much corn meal was used. With the diet thus supplemented, it was found that a week's daily use of enough of the corn products to furnish over one third of the calories caused no loss of appetite, nor disturbance nor discomfort of digestion, and was entirely satisfactory to the two women and to the man of the family.

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[1] Monroe, Guilford and Colman: Data to be published in full by the Bureau of Publications of Teachers College, Columbia University, New York.

[2] An enthusiast could easily have made the corn kernel contribute a considerably higher percentage of the total number of calories by more frequent substitution of glucose for sucrose and of corn oil for olive oil, and by the use of a higher percentage of corn meal in bread-making, thus making a product of less conventional texture but equal food value.

[3] Allen and Short: Results to be published.

Granted that corn products may be substituted for those of wheat to a large extent, or entirely, if desired, without detriment to the attractiveness and palatability of the diet or to the nutritional condition as studied in human subjects by determination of intake and output in quantitative experiments of as much as a month's duration, the question may still arise in some minds as to whether long continued use of corn would give results in every way as favorable as the corresponding use of wheat.

The investigations of McCollum, in which laboratory animals have been kept on restricted diets, often for a lifetime, and in several cases for more than one generation, seem well calculated to bring to light any differences in the more obscure factors of food value or in the general wholesomeness of the two grains, if any such differences exist. In recent summaries of the results of an extended experience with such experiments, McCollum has repeatedly stated that wheat and maize are very similar in their dietary properties. If this seems surprising in view of the well known inadequacy of zein when fed as the sole protein of the diet, it should be recalled that Osborne and Mendel, to whom our knowledge of the nature of this deficiency of zein is so largely due, have demonstrated also that the other important protein of corn, maize glutelin, is adequate to meet all protein requirements and maintain a normal rate of growth when fed as the sole protein of the diet. They have also shown that zein, while inadequate alone, may yet take the major part in meeting the protein requirements, either of maintenance or of growth, when it is supplemented by a much smaller amount of milk protein.

Persistent use of a diet consisting too exclusively of corn products may lead to unfavorable results, but this is true of the other grains as well. To quote a very recent article by McCollum: "When an animal is fed solely on a single kind of seed, regardless of the kind of plant from which it is derived, loss of weight ensues and death is certain to supervene." This is as true of wheat as of corn, and is no argument against the partial or complete substitution of the one for the other. To the slight extent that two such similar seeds may supplement each other, the substitution of corn for, say, half the wheat ordinarily eaten may improve the biologic value of a diet drawn largely from these grains. Seeds should, however, be supplemented not so much by other seeds as by leaves and tubers, and still better by milk. Quoting McCollum again: "Moderate amounts of milk supplement the deficiencies of the seeds most satisfactorily, and its use forms the greatest factor of safety in our diet."

It is probably no longer necessary to point out that, if pellagra is due to faulty diet, the fault lies not in the use of corn, but in the fact that the diet contains too little of foods of other types. Lusk[4] has recently stated the case of pellagra in the corn belt and the use of corn as food as follows:

> It must be here definitely stated that the use of corn meal is not the cause of pellagra, provided the right kind of other foods be taken with it. . . . Pellagra is generally believed to be produced by a too exclusive use of highly milled corn and wheat flour in association with salt meats and canned goods, all of which are deficient in vitamins. The administration of fresh milk is naturally indicated. Goldberger states that after the addition of milk to the diet of a pellagrin, the typical clinical picture of pellagra no longer persists. The poor in the mill towns of the South lived too exclusively on a corn diet without admixture of milk or fresh animal food or even of cabbage, and pellagra has been the consequence.
>
> The Food Administrator asks us to eat corn bread and save the wheat for export. It is a very small sacrifice to eat corn bread at one meal or more a day. Indian corn saved our New England ancestors from starvation, and we can in part substitute it for our wheat and send the latter abroad to spare others from starvation. The simplest elements of patriotism demand that we do this.

The plea for a fuller use of corn as human food in place of a part of the wheat which we ordinarily consume gains new emphasis and significance from the fact that the wheat situation is becoming constantly more acute, and all indications are that even with a good crop this summer, economy of wheat will continue to be a pressing problem for at least the coming year, whatever may be the fortunes of war.

SKIN GRAFTING*

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At no time in the world's history have there been under treatment so many persons injured and crippled as now. As a great majority of these are suffering from infected wounds, frequently with a great deal of sloughing and destruction of extensive areas of skin and superficial tissues, anything that will tend to hasten healing and cover raw surfaces will be a great benefit to the patient, and a great saving in time and money.

Much has been done in the way of simplifying dressings, and in the control of infection by the scientific application of time-honored surgical principles, and the introduction of antiseptics that have a maximum bactericidal action and a minimum destructive action on the tissues. I shall not, however, dwell on the treatment of wounds or on the major surgical operations indicated, but shall confine myself to the final stage of the treatment of most infected wounds, that is the covering of the raw surfaces with skin.

A great many wounds primarily infected are, under modern methods, made rapidly sterile, as shown by the disappearance of pus and bacteria, and may then be closed with impunity like any fresh wound. But in many of these cases, when there has been extensive destruction of skin, the healthy edges of the raw surfaces cannot be brought together by the ordinary plastic method, and skin grafting must be resorted to.

In reviewing the history of surgery it is not surprising to note that skin grafting was one of the first operations attempted; in fact, it is asserted that the ancient Hindus and Egyptians successfully transplanted skin before the Christian era, and it is generally accepted that this operation has been done with varying degrees of success in different parts of the world ever since. It was not, however, until 1869, following the reading of a paper and the presentation of a case by Reverdin before the Société de chirurgie in Paris, that it was accepted as a regular surgical procedure, and since that time a great deal has been written on the subject.

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[4] Lusk, Graham: Scient. Month., 1917, 5, 298-309.

* From the Mayo Clinic.

* Presented before the Olmsted County Medical Association, Rochester, Minn., April 10, 1918.

The grafts, as first suggested by Reverdin, were very similar to those that we now accept as probably of the best type of graft for use in the ordinary case in which closure of the wound is the all important consideration. These are small island grafts, principally epidermic, but containing some dermis in the center, and called by Davis small, deep skin grafts. The other accepted and useful grafts are known as Thiersch grafts and Wolfe grafts. The former are thin sheets of skin, removed with a razor, and include all the layers of the epidermis and possibly a portion of the dermis; the latter are composed of the entire thickness of the skin, and when successfully used are the most satisfactory.

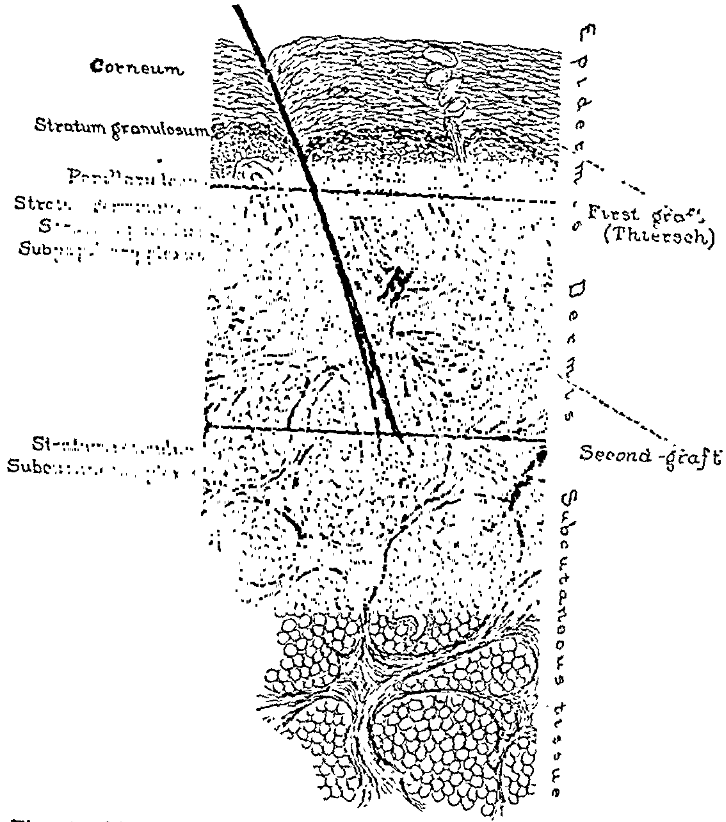

Fig. 1.—Normal skin, showing part utilized in Thiersch graft, and the deep part utilized by a new method.

Skin grafting is divided into three distinct types, depending entirely on where the grafts are obtained: (1) autoplastic grafts—skin taken from another part of the body of the patient; (2) isoplastic grafts—skin taken from another person, and (3) zooplastic grafts—skin taken from one of the lower animals. All authorities agree that the autograft is the most satisfactory, and a great many hesitate to use even isografts when it is possible to get skin from the patient.

I myself have had no experience in the use of zoodermic grafts, but am satisfied that there is a much larger field of usefulness for the isograft than is generally believed. When one takes into consideration the ease with which good grafting material may be obtained in the operating room without discomfort or inconvenience to the donor, and with the removal of all dread of the operation from the recipient, one is convinced that it should certainly be more frequently practiced. In isografting, the cause of failure should not always be attributed to the graft itself, since it may be due to the patient, to the condition of the wound or to the after-care and dressing, etc. This problem is especially difficult to solve in private practice, in which time is such an important consideration to the patient and little or no help can be obtained by experimental work.

In all the patients requiring skin grafting who were under my care during the past year, the blood of the donor, as well as that of the recipient, has been tested for agglutination. The results have been very interesting and instructive, and I feel sure will add a great deal to the popularity of the use of the isograft. In many cases the method will obviate the unnecessary removal of skin when there is little or no likelihood of its taking. I have tested the principle with the three varieties of grafts, and am satisfied that blood grouping is just as important for good results in skin grafting as it is necessary in transfusion, and that it is governed by the same principles.[1] While the results obtained are not positive, nevertheless, I have never had the skin take which was removed from a donor whose red blood corpuscles were agglutinated by the serum of the patient. The results in all other cases have been very satisfactory, almost, if not entirely, equal to autodermic grafting. In most cases in which a donor's skin is to be used, a Wassermann test should be made to guard against syphilitic infection.

In any case in which it is considered expedient to resort to skin grafting, the first consideration is to have the raw suface in a healthy condition. Experience shows that only poor results can be expected on an indolent ulcer, one covered with exuberant granulation tissue or one in which the microscopic slide shows numerous bacteria. Grafting may be satisfactorily done on fresh raw surfaces, but pedicle or plastic grafts are, as a rule, more satisfactory in these cases, and true skin grafting is much more frequently indicated as a secondary method in closing open wounds or ulcers.

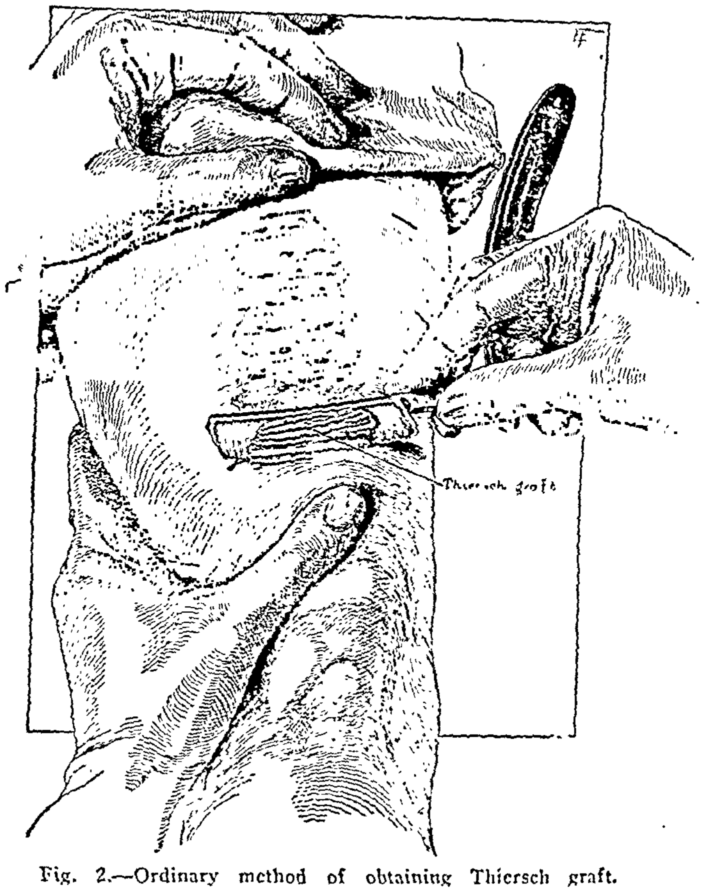

Fig. 2.—Ordinary method of obtaining Thiersch graft.

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1. Sanford, A. H.: Selection of the Donor for Transfusion, Journal-Lancet, 1917, 37, 698.

In all chronic ulcers, especially those resulting from oentgen-ray or electric burns, the first consideration s to improve the circulation in the part, and to stimuate healing by the removal of the unhealthy granulaions, either by curetting or by excision of the ulcer. ;rafts may be placed immediately, but in most cases t is advisable to apply to the raw surface hot saline r boracic dressings until it is covered with healthy ranulations, and in some cases it is desirable to use carlet red ointment (8 per cent.) once in two days intil a healthy condition of the granulating surface s obtained and a small pellicle of new skin appears long the edge. Satisfactory results can then be xpected from grafting.

In the more recent cases, such as are so often seen n patients following burns, extensive superficial infecions, or radical operations in malignancy, the best lan is to apply hot saline, neutral solution of chlorinted soda (Dakin's solution) or lichloramin-T, until the wound is nade sterile, as shown by smears n three consecutive days. The rafts may then be applied direct, r, if the granulations are exuberant, they may first e curetted away or rubbed off with a piece of dry auze, controlling hemorrhage by pressure with gauze rung dry from hot saline solution and applying the rafts immediately, pressing them well into place with noist gauze. If there is much oozing it is better to lelay the placing of grafts for twenty-four hours, eeping up the hot moist dressings.

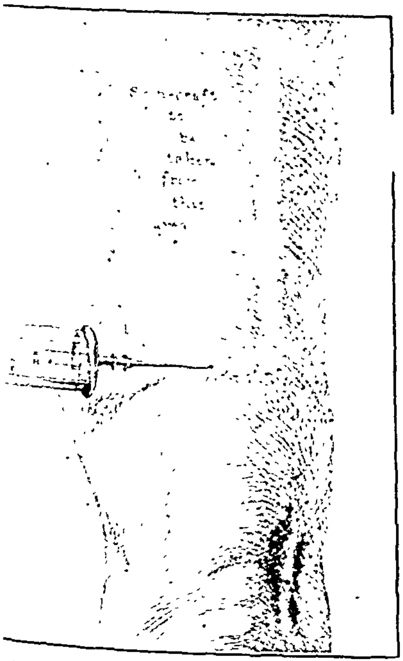

Fig. 3.—Superficial blocking with local aneshesia for skin grafting.

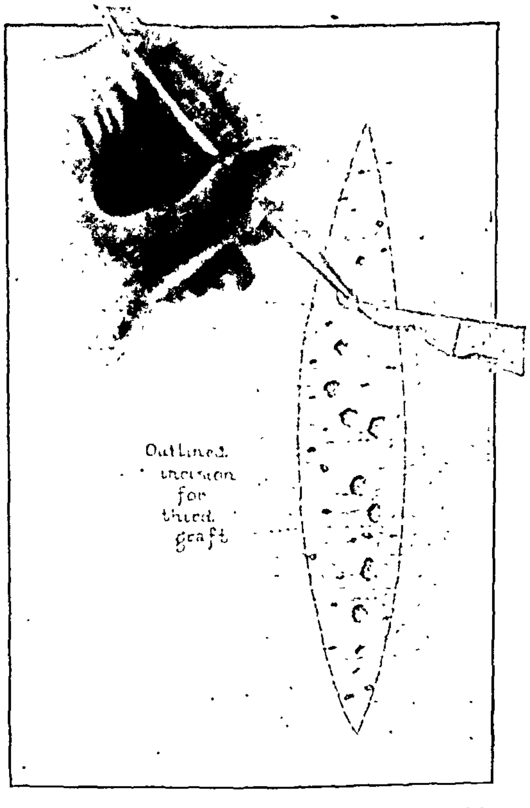

Fig. 4.—Further utilization of area from which Thiersch graft has been removed.

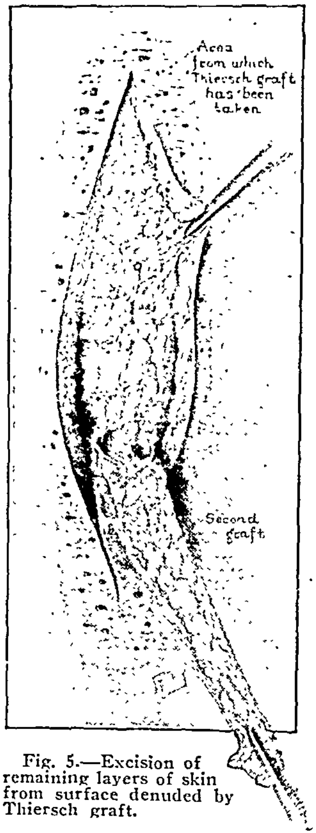

Fig. 5.—Excision of remaining layers of skin from surface denuded by Thiersch graft.

The types of grafts to be used and where they shall e obtained are very important considerations. The ull thickness, or Wolfe graft, gives the most normal ooking and best functionating skin, but has the disdvantage that it is not so apt to take as is either the Reverdin or Thiersch graft. However, in annular lcers of the extremities, around joints, or in dealing vith extensive areas, it is necessary to have at least part of the surface covered with grafts of the entire hickness of the skin.

In deciding where to obtain grafts, the type of skin desired should naturally be considered. For most cases the skin from the anterior and outer surface of the thigh or upper arm will be found best, whether it be from the patient himself or from a donor.

General anesthesia is frequently advisable, but even extensive grafts may be obtained under local anesthesia with very little discomfort to the donor, although so far as the operation or the surgeon is concerned, the latter has no advantage. It is much easier, however, to obtain a donor if it is understood that he will not be anesthetized.

It makes very little difference what method is used in preparing the skin, and the iodin method is as satisfactory as any. The area is first cleaned with benzin containing 1:1,000 iodin, and after drying, it is given two coats of 3.5 per cent. iodin in alcohol. Figure 1 is a transverse section of the normal skin. A Thiersch graft is then cut after the ordinary method (Fig. 2). If local anesthesia is to be used, the skin is injected as shown in Figure 3. If the skin is thick, a second layer may be removed from the same area in the same way, or small island grafts may be taken from the center of the raw surface to include some of the deeper layers of the epidermis and some of the superficial layers of the dermis (Fig. 4).

It is advisable to reduce the size of the wound, especially if much of the dermis has been removed, by cutting an elliptical piece of tissue (Fig. 5) and suturing the edges together with silkworm gut and horsehair. The tissue thus removed may be utilized for grafting by cutting it into small, [illegible] grafts (a term used by Colebrook and [illegible] applying just as the Reverdin grafts [illegible] Figure 6 shows the wound [illegible] grafts and small, deep grafts taken from [illegible] area. The advantages of this method are: (1) Grafting material equal to twice the denuded area is obtained; (2) it is easily and quickly done and is especially suited for local anesthesia, and (3) the clean cut wound may be expected to heal by primary union after being sutured with silkworm gut and horsehair, which has a distinct advantage over the raw area left after the Thiersch method or the necessary multiple wounds of the Reverdin method.

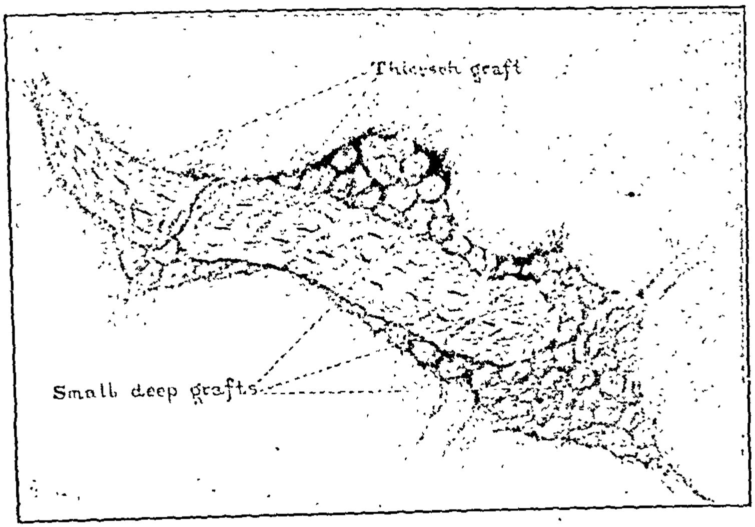

Fig. 6.—Wound covered with Thiersch grafts and small deep grafts taken from denuded area.

If large grafts, either Thiersch or those from superficial dermic layers, are used, they should be punctured at numerous points to allow the free escape of serum, which would otherwise tend to float them from the surface.

The type of dressing to use is of the utmost importance and varies with the nature of the case. If the wound is completely covered with Thiersch grafts, the open method of treatment, that of protecting the surface with a wire screen, is probably the best, with an occasional removal of any crusts or thick secretions and the application by atomizer of dichloramin-T (4 per cent.) or neutral solution of chlorinated soda. If the wound is only partially covered with grafts, the most satisfactory dressing is first to cover the raw surface and grafts with open-mesh net that has been previously impregnated with paraffin, and then to apply a wet dressing, which should be changed every four hours for three days without disturbing the paraffined net, the latter being held in place by sutures or by applying soft paraffin along the edges to fix it to the surrounding skin. Open air treatment is then combined with hot dressings, the hot dressings being used at night and the wound left exposed during the greater part of the day and sprayed once or twice during the twelve hours with neutral solution of chlorinated soda. As a rule, grafts have taken well in one week's time, after which sterile petrolatum makes a very satisfactory dressing.

Frequently the paraffined net becomes firmly adherent to the grafts while wet dressings are being combined with open air treatment; but it may easily be freed by applying a liberal petrolatum dressing or by spraying with liquid petrolatum for from four to six hours before attempting its removal.

Body Heat and Oxidation.—The total quantity of heat produced by the body is a measure of the intensity of the oxidation of carbohydrate, fat, and protein within the body.—Lusk, Food in War Time.

PHYSIOLOGIC COLECTOMY IN CHRONI TOXEMIAS OF INTESTINAL ORIGIN

CHARLES A. L. REED, M.D.

CINCINNATI

The cumulative experience of both physicians an surgeons engaged in a large way with the treatment o gastro-intestinal conditions, and of experimenta scientists in dealing with these problems, tends to confirm what may be expressed as at least tentative conclusions as follows:

1. The origin of certain toxins and of the no recognized anaphylatoxin[1]. demonstrated to be prese in certain toxemias, both convulsive and nonconvu sive in type, is due to certain conditions of stasis i the gastro-intestinal tract.

2. Stasis in the gastro-intestinal tract implies (a fecal retardation in either the small intestine or th colon or both; (*b*) venous retardation in either th mesocolic circulation or the mesenteric circulation c both, and (*c*) retardation in the lymphatic circulatic of both the mesocolon and the mesentery.

3. These three forms of stasis are associated wi and obviously dependent on some form of gastr intestinal displacement or other distortion, and ar therefore, primarily mechanical in origin.

4. There can be no permanent benefit from trea ment in these cases of stasis with consequent constit tional manifestations without first a correction of tl initial link in the chain of pathologic sequences ju enumerated. This can be accomplished in the majori of cases only by the surgical correction of the di placements or distortions of the gastro-intestinal tra as revealed by careful diagnostic methods, oft including exploratory incision.

It is of the highest importance that the gener practitioner who is the attendant in the first instan of these unfortunate persons should know just wh surgical measures are available for their relief, a just what results may reasonably be expected. In th connection it is important at the very outset to emph size the rule that either no surgery at all or the lea

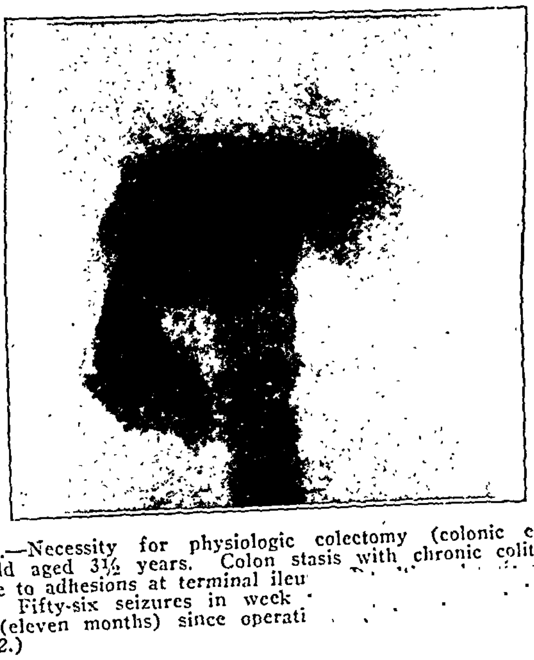

Fig. 1.—Necessity for physiologic colectomy (colonic exclusio in a child aged 3½ years. Colon stasis with chronic colitis. Il nvuls stasis due to adhesions at terminal ileu seiz toxemia. Fifty-six seizures in week sho to date (eleven months) since operati in Fig. 2.)

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[1] Novy, F. G., and DeKruiff, P. H.: Anaphylatoxin and Anaphyla The Journal A. M. A., May 26, 1917, p. 1524.

and safest surgery possible should be employed to accomplish the end in view. My own practice under this rule began with the conservative nonsurgical treatment consisting of diet judiciously applied, visceral massage, posture and attempted mechanical support of the displaced and generally ptotic organs. This regimen was effective in producing even symptomatic cures in only a limited number of cases. I then devised the operation of parietal implantation of the colon with anchorage of the stomach.[2]

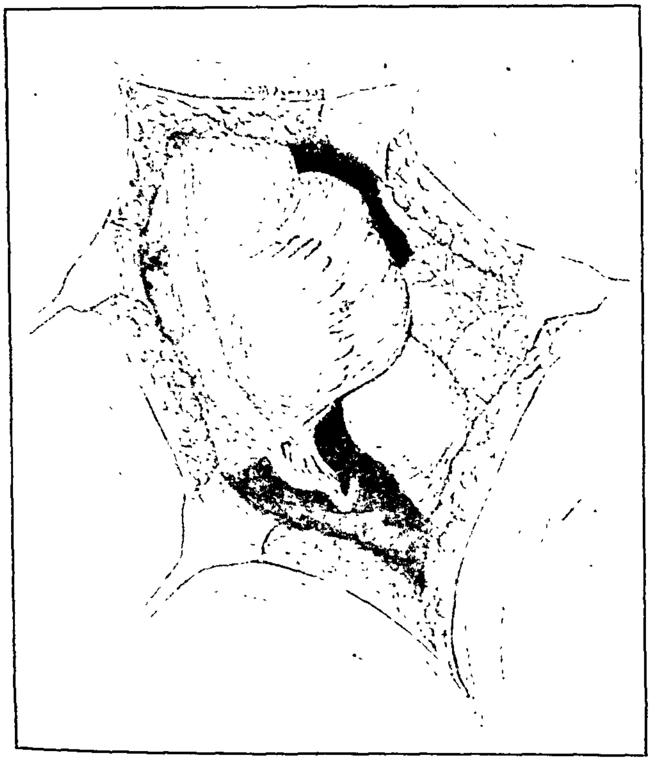
Fig. 2.—Stricture at ileocecal juncture with dilatation of the ileum and extensive exudate (Jackson membrane) over the cecum. (Same as Fig. 1).

I found this procedure not only primarily but permanently effective in a much larger percentage of cases. There were, however, certain cases, particularly of the chronic convulsive type, in which secondary changes in the colon seemed to preclude the possibility of functional restoration and consequently demanded its exclusion from functional duty. This led me to adopt Lane's procedure of ileosigmoidostomy. Satisfactory results were defeated in some but not all of these cases by anastaltic loading of the disused colon; but in some others in which this did not occur, follicular hypertrophy and hypersecretion of mucus associated with atrophy of the muscularis persisted and the toxigenesis continued. I then practiced colectomy with the result that I found it a prohibitively dangerous procedure, especially in chronic convulsive toxemias, and one justified only by extreme conditions in this or any other class of cases. In the instances in which complete relief from both local and constitutional symptoms followed removal of the large bowel, I became convinced that the salutary result was attributable in an important degree at least to the fact that retardative traction had thereby been removed from the superior mesenteric vein, and the venous turgescence of the mesocolic and mesenteric circulation had consequently been corrected. It will be seen, therefore, that the necessities of the situation demanded some procedure which would be less dangerous than primary colectomy. I therefore tried to do this operation at two stages, namely, a primary ileosigmoidostomy and secondary removal of the colon. In occasional instances, however, anastalsis was pronounced, with the result that the unused colon speedily became loaded, causing an aggravation rather than an amelioration of the toxemic phenomena. A secondary colectomy was thus made necessary before adequate benefit had been derived from the first stage of the operation. This experience forced on me a realization of the importance of devising some means against anastaltic loading of the colon following ileosigmoidostomy, with the result that I beg leave to report on the methods thus evolved.

Before doing so, however, I feel that it is important to call attention to certain modifications which I have adopted in the manner of doing ileosigmoidostomy. Thus it will have been noted that in practically all illustrations of ileosigmoidostomy there is either an end-to-side anastomosis or a side-to-side anastomosis with the proximal ileum coming down from above. In all cases that I have seen, the proximal ileum lies loosely on the floor of the pelvis, from which it comes up or may be brought up to the level of the sigmoid. It follows, therefore, that, to avoid retardative angulation at the point of anastomosis, the terminus of the proximal ileum should point upward rather than downward. End-to-side anastomosis between the ileum and sigmoid, whether done by the button or by suture, is sure to be followed by enough cicatricial contraction of the resulting stoma to interfere with free discharge of the ileac content. The use of the clamps in ileosigmoidostomy is both unnecessary and cumbersome, and interferes with the intelligent control of incidental hemorrhage. These considerations have prompted me to revise the technic as follows:

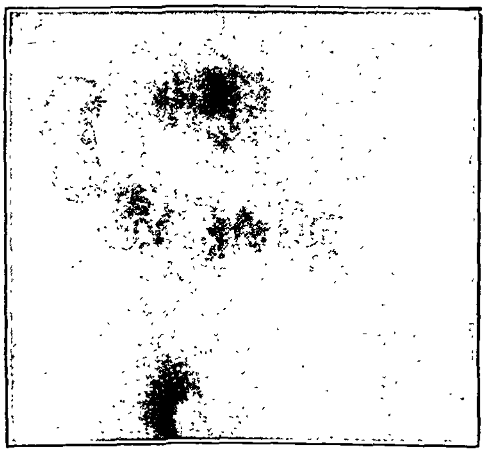
Fig. 3.—Stasis in remnant of transverse colon after right side colectomy, retardative angulation at splenic flexure not being relieved.

REVISED TECHNIC OF ILEOSIGMOIDOSTOMY

1. Approximate the ileum and sigmoid with walls relaxed for a distance of about 2½ inches, taking care that the ileum proximal to this point shall hang freely in the pelvis.

2. Stitch the ileum to the outside of one tenia of the sigmoid, using fine but strong Japanese silk for the purpose of carrying this suture line the full length of the pror anastomosis.

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[2] Reed, C. A. L.: Fixation of the Ptosic Stomach and Colon by Retroperitoneal Implantation, The Journal A. M. A., March 28, 1914, p. 999.

3. Open both the ileum and the sigmoid nearly the full length of this suture line, controlling the always slight hemorrhage when necessary by forceps pressure.

4. Trim away the tissue from the free margin of the sigmoidal incision back to the other tenia and also cut away a very little tissue from the free margin of the ileac incision.

5. Suture the cut margins together with hemostatic stitch of small chromic gut, the suture line being frequently interrupted by a lock knot, tied without cutting the thread, the hemostatic suture being carried around to point of beginning.

6. The outer line of suture is then continued to the point of beginning.

7. The ileum is then clamped about three-quarters inch from the distal end of the anastomosis with two parallel hemostats and divided between, the cut edges of the intestine being treated with tincture of iodin.

8. The end of the proximal (anastomosed) ileum is then stitched over the hemostat and infolded, this process being supplemented by another infolding by a purse-string suture with the object of inverting the end of the ileum wedgelike into and through the upper end of the long anastomotic stoma. In this way the stoma is pried open and held open, thus obviating the use of the always difficult and sometimes mischievous tube. The problem of the "blind end" of the ileum is thus also eliminated.

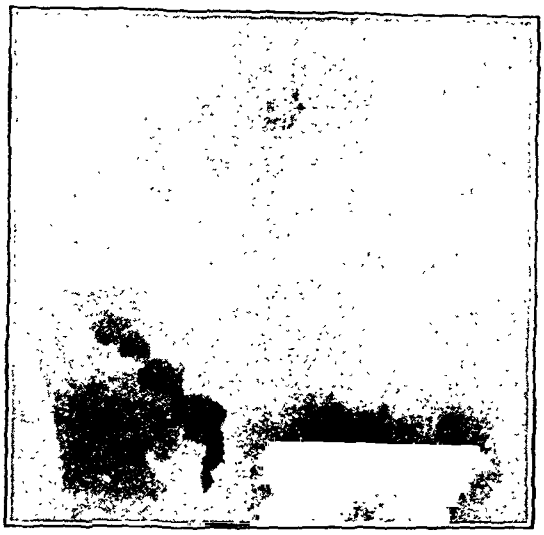

Fig. 4.—Ileac stasis after right side colectomy with end-to-side anastomosis, the retardation in the ileum being due to contraction of the anastomotic stoma.

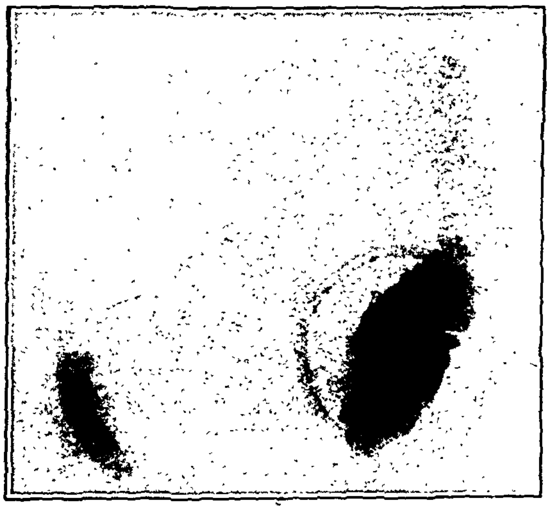

Fig. 5.—Complete relief of ileac stasis by parietal implantation of the colon and cecostomy. The cecostomy tube is shown in situ. Complete relief of toxemic symptoms.

PHYSIOLOGIC COLECTOMY WITH COMPLETE EXCLUSION OF THE LARGE BOWEL (FIG. 8)

The first method to evolve in my hands was based on the conception that, in doing a two-stage colectomy, the first stage — that of ileosigmoidostomy as just described — might be safely supplemented by complete exclusion of the colon, based on the experiments of Barbour to the effect that the disused colon rapidly undergoes atrophy both in its walls and in its follicular elements.[1]

1. Open the abdomen by a 6-inch oblique incision in the left lower quadrant.

2. Explore the abdomen and break up all adhesions, taking great care to isolate the terminal ileum at its cecal connection, which can generally be done by elevating the abdominal wall with a retractor.

3. Do an ileosigmoidostomy as described in the preceding paragraph.

4. Divide the sigmoid in its upper arch at a point from 2 to 4 inches above the anastomosis.

5. Close the upper end of the distal sigmoid by infolding with at least three layers of sutures, the last or peritoneal layer being of fine but strong silk.

6. Stitch the open end of the proximal sigmoid in the upper angle of the incision.

7. Stitch the open end of the distal ileum in the lower angle of the incision.

8. Close the intervening part of the incision with laminated chromic catgut fortified with two or three *en masse* silkworm sutures.

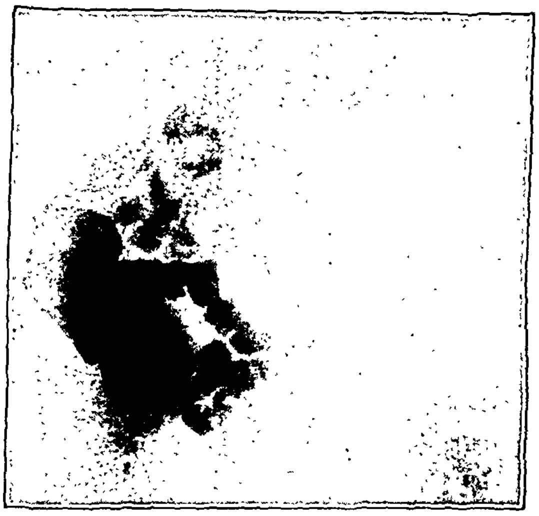

Fig. 6.—Failure to relieve ileac stasis by parietal implantation c the colon and cecostomy with resulting failure to relieve the constiti tional symptoms.

9. Insert a large size catheter through the open ileum int the cecum and a large tube (1.5 cm.) into the open orific of the proximal sigmoid.

10. Insert a rectal tube with several perforations up to bu not through the anastomosis.

The tubes should be left in position from a week tc ten days. Irrigations of the colon should be inaugurated on the third day and kept up daily until all feca discharge ceases. The tubes may then be removed and put back only as needed for irrigations. The intervals between irrigations may now be prolonged to two days according to the amount of mucus secreted. The secretion diminishes with the progressive atrophy of the disused bowel. In practically all of my cases it has become negligible in from six to ten weeks, the exceptions being those cases in which mucous colitis, always present in some degree, is unusually severe. In all instances the patients are speedily up and about their daily occupations following primary surgical recovery. Thus, for example, a schoolteacher has resumed her occupation, a bridge-builder is working on the channel span of a new structure, a lineman is climbing poles and working with live wires, a farmer is back at his crops, a stenographer is again at her desk, a mechanical engineer is again in charge of the power of a large establishment, a large manufacturer is again running his business, a child of 3½ is again at play. In none of these exacting occupations is the condition resulting from this form of colon exclusion proving to be an embarrassment, particularly as compared with conditions prevailing before the operation.

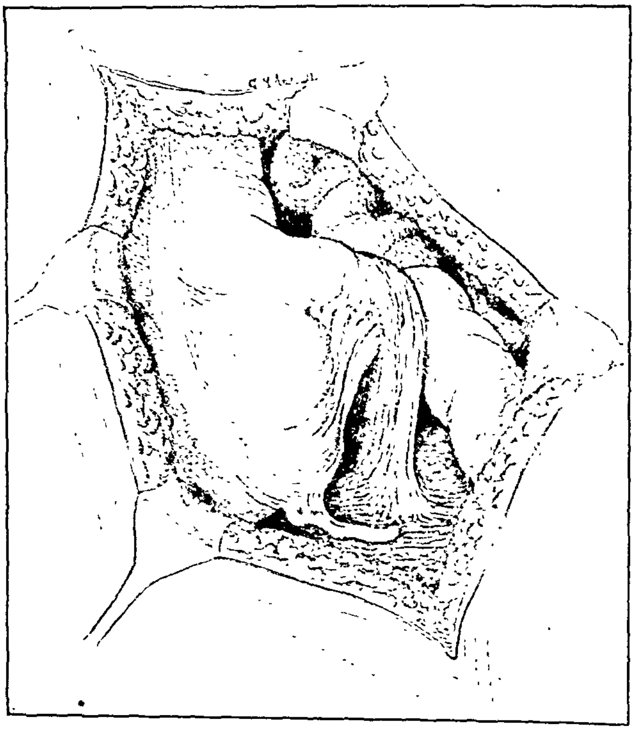

Fig. 7.—Extensive band adhesion at the terminal ileum causing marked ileac stasis with dilatation of small intestine.

The further argument in favor of this procedure as the first stage of a possible anatomic colectomy may be stated as follows:

1. It is less dangerous than a primary colectomy. In a series of thirty-one cases, I have lost only one due to the operation itself. In this case, the patient died in apparently anaphylactic shock from fecal extravasation into the peritoneum due to analstatic pressure on the occluded distal sigmoid. In the two other cases, lost in this series, one, a child, aged 3½ years, died on the eighth day in serial convulsions, while, in the other, a male adult, death resulted from anuria.

2. It facilitates detoxication of, first, the alimentary canal and, second, the general system.

3. It tends in most cases to arrest the toxigenic process and thus to restore the normal surgical resistance of the patient.

4. It so far restores the general health without establishing embarrassing local conditions that I have not so far had to do a single anatomic extirpation as a secondary procedure.

5. If secondary operation shall become necessary, this primary procedure will have caused detoxication of the patient with restoration of surgical resistance, while the atrophy of the colon with corresponding shrinkage of blood vessels and nerves will have materially diminished the technical difficulties of the final procedure.

The argument against this operation is as follows:

1. It is always associated with some superficial *B. coli* infection which, however, through the use of a solution of sodium para-toluenesulphochloramin (chlorazene), during and after operation, has never proved serious.

2. In at least 5 per cent. of the cases and in spite of all precautions, pressure from anastalsis is liable to force open the upper end of the sigmoid, thus necessitating a secondary operation for its closure.

3. In one case I have had a ventral hernia develop from the upper or colon end of the incision.

4. The two intestinal orifices, not troublesome but requiring some attention, are, however, permanent unless a secondary operation is done. This secondary operation may be (*a*) either a complete extirpation of the colon as I at first contemplated but have not yet had occasion to do, or (*b*) a restitution of the tract with formation of an intrasigmoidal valve such as I am about to describe.

PHYSIOLOGIC COLECTOMY WITH CIRCUAR INTRASIGMOIDAL VALVE (FIG. 9)

The objections to the operation of colonic exclusion as first described prompted me to devise a procedure against anastaltic pressure, one that would require less attention and would less likely require secondary operation for its termination. The result was the procedure which is done as follows:

1. Make the ileosigmoidostomy by side-to-side anastomosis, as already described in this paper.

2. Divide the upper arch of the sigmoid, if possible, 4 inches above the anastomosis.

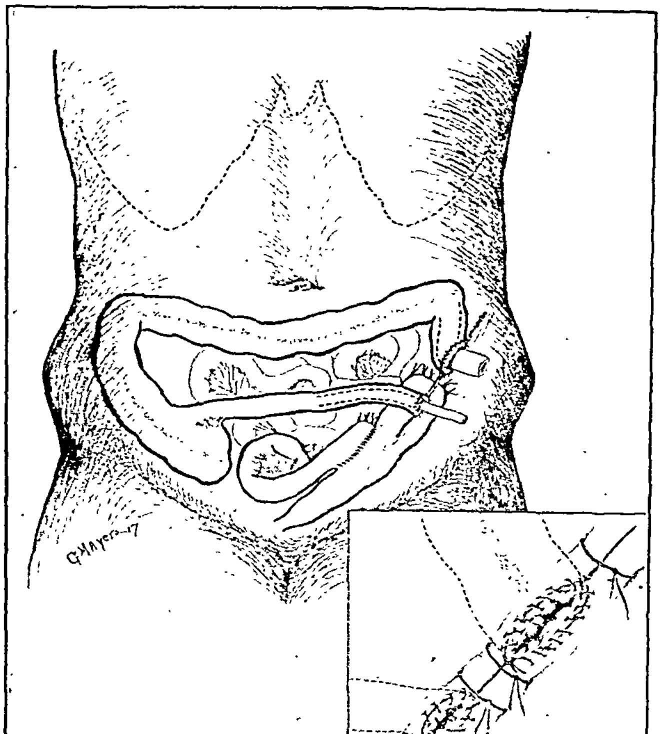

Fig. 8.—Colon exclusion (physiologic colectomy) completed with tube in terminal ileum. A catheter is generally used and carried through the ileocecal valve into the cecum. The effluent tube is seen in the open end of the colon. The method of fixing the open ends to the skin is shown in the lower right hand corner. (First method.)

3. Dissect both of the divided ends of the bowel from the mesosigmoid for a distance of at least an inch.

4. Reunite the divided ends of the sigmoid by means *of a Murphy button smaller than the natural lumen of the intestine.*

5. As soon as the button is clamped, invaginate it into the distal sigmoid to the depth that it will go—probably an inch.

6. Make this intussusception permanent by stitching the margin of the fold to the wall of the invaginated portion, using preferably fine but strong Japanese silk for the purpose.

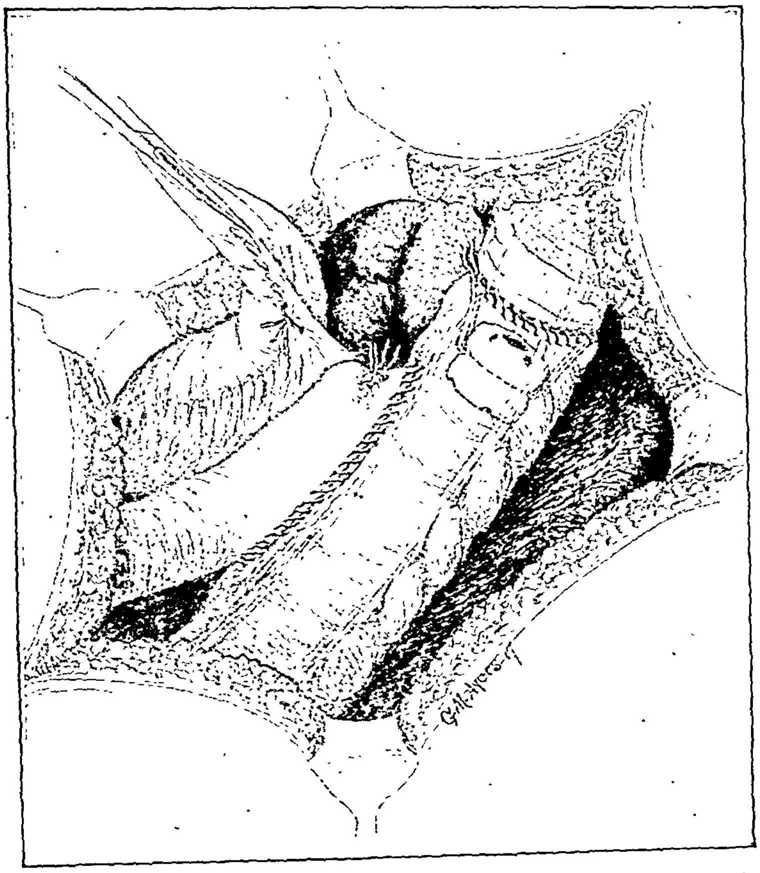

Fig. 9.—Ileosigmoidostomy with side-to-side anastomosis and sigmoidosigmoidostomy with circular intrasigmoidal valve to prevent anastaltic filling of the disused colon. (Second method.)

7. Stitch the open end of the terminal ileum into the lower angle of the wound.

8. Insert a large catheter through the terminal ileum into the cecum.

9. Insert a large rectal tube up to but not through the anastomotic orifice, the perforations in the tube extending down nearly to the level of the levator ani muscle.

10. The wound, after being thoroughly cleaned with chlorazene solution, is closed with laminated chromic gut, fortified with a few silkworm sutures and dressed with gauze saturated with chlorazene.

The patient should be given a liquid diet for a few days, there being no hurry to stimulate the normal peristalsis of the small intestine. Irrigations through the ileocecal catheter should be deferred for from six to eight days, or in the absence of symptoms, until the button comes away. They may then be inaugurated by throwing into the cecum about 4 ounces of some one of the numerous liquid petrolatums. This may be repeated every six hours until the contents of the colon have become at least semiliquid and will drain away through the rectal tube. The rectal tube itself, inserted at the time of operation, should be kept in for at least ten days, and should be removed only for purposes of cleansing. After its first removal following the establishment of fecal drainage, no attempt should be made to reinsert it for a distance of more than 4 inches. The ileocecal tube should be kept in and the irrigations continued for several weeks or months, after which the ileac orifice may be closed or permitted to close spontaneously.

The argument in favor of this procedure is that: 1. It is obviously safe. I have so far done it in only five cases, but in each instance without the slightest difficulty. 2. The valve formation is apparently effective against anastaltic pressure as, following the primary cleansing of the colon, no fecal matter has been detectable through the ileocecal tube. 3. If the drainage of the colon is thus permanently secured without the danger of anastalsis, there is no obvious reason why the large bowel should ever be removed. The argument against the procedure is that it is not available in cases in which the sigmoid is short or buried in fat or bound down, literally buried, by adhesions of an old perisigmoiditis. The chief argument against it as a primary procedure is that in the subsequent prolonged drainage of the colon, the highly toxic mucus must come down through the rectum from which it is absorbed with facility. In this particular, colon exclusion with external drainage is obviously superior.

THIRD METHOD: PHYSIOLOGIC COLECTOMY WITH LATERAL TRAP-VALVE IN THE SIGMOID

In three cases the conditions just described, namely, short sigmoid buried in adhesions, made it impracticable to apply either the first or the second method just described. In these circumstances, I had recourse to a technic which may be carried out as follows:

1. Do an ileosigmoidostomy as described in this paper.

2. Divide the anterior wall of the sigmoid at a point as far as possible above the anastomosis, carrying the incision through all the layers from outside of one tenia to a similar distance outside the other tenia.

3. Closely whip-stitch the margin of the upper lip of the wound.

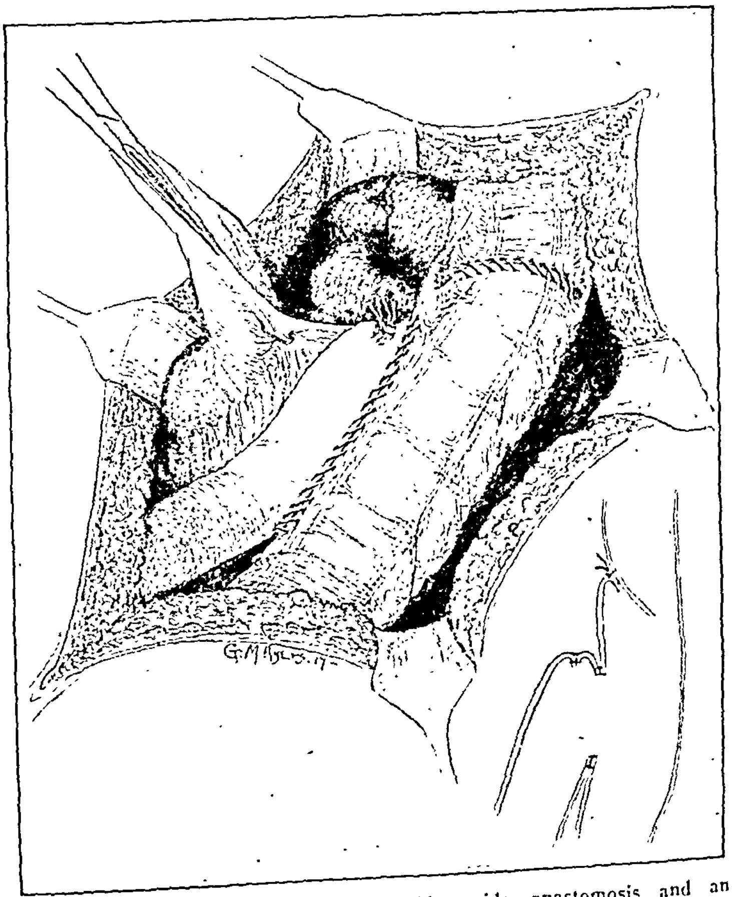

Fig. 10.—Ileosigmoidostomy with side-to-side anastomosis and an infolding flap of sigmoid for formation of trap-valve to prevent anastaltic filling of the unused colon.

4. Bring the lower lip of the wound up to a point about an inch above the margin of the upper lip, and stitch the former to the peritoneal surface by a double row of fine but strong Japanese silk.

5. Conclude the operation in all other particulars as described in the "second method."

The argument in favor of the method first described is that it can be done under anatomic conditions when neither of the other methods is available. It is simple and seems to have been effective in the cases in which I have employed it. The argument against it is that the suturing may give way under violent anastalsis just as in the first method. This accident has not been encountered in my brief experience with this particular technic. The valve formation may not be as effective as the circular valve secured by the second method. In any event, it would seem that the condition established by the operation is sufficient to inhibit the anastaltic wave while not interfering with the peristaltic wave from the cecum to the sigmoid. If further experience shall confirm this conception, the procedure just described may become the one of election in physiologic colectomy.

FOURTH METHOD: PHYSIOLOGIC COLECTOMY BY END-TO-END ILEOSIGMOIDOSTOMY AND SIDE-TO-SIDE SIGMOIDOSIGMOIDOSTOMY.

The very interesting experimental studies in anastalsis and therapy of the colon by Lynch and Draper[3] resulted in the suggestion by them of a procedure to block the anastaltic wave. This procedure, as I understand it chiefly from the illustration accompanying their article, may be described as follows:

1. The ileum is divided near the cecum, and the orifice of the distal segment is closed.
2. The sigmoid is divided about its middle, and both ends are closed.
3. An end-to-side anastomosis is effected between the proximal ileum and the upper end of the distal segment of the sigmoid.
4. A side-to-side anastomosis is then done between the two segments of the sigmoid, the stoma being located well below the ileosigmoidal connection.

The valvelike arrangement effected by the slit connecting the two segments of the sigmoid may serve effectively to prevent reflux into the upper colon while not interfering with efflux from it. *In any event, it* is evident that the continuity of the anastaltic wave is intercepted by the division of the intestine and the lateral anastomosis. There are, however, many sigmoids in which this procedure cannot be carried out. It would seem, too, that the closed end of the distal sigmoid is subjected to dangerous anastaltic pressure. It is evident, too, that the *procedure must involve* tedious details and consume much time. On its experimental basis, however, it stands as an interesting confirmation of the principle for which I contend.

CONCLUSIONS

In summarizing my experience so far I may say that it has led to at least tentative conclusions as follows:

1. Patients with intestinal stasis should be treated first by dietetic and hygienic measures, including massage and support, until and only until the inutility of such procedures has been demonstrated in the individual case.
2. Colon fixation with incidental anchorage of the stomach when properly done is at once striking and permanent in the relief afforded, and being conservative, is to be recognized as the operation of choice in all but extreme cases.
3. Physiologic colectomy with valve formation just above the sigmoid may well be done as a safeguard against anastalsis in cases of ptosis of the colon, causing glandular hypertrophy which has further resulted in a marked catarrhal colitis associated with atrophy of the muscularis of the colon.
4. Physiologic colectomy with external drainage through the distal ostium of the colon should be done *only* in extreme cases, and then only with the understanding that it is to be followed ultimately either by (*a*) reestablishment of the colonic canal with valve formation at the point of anastomosis or by (*b*) the complete removal of the colon.

THE VALUE OF THE WASSERMANN REACTION

A REPLY *

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In an article on the value of the Wassermann reaction, as indicated by postmortem investigation in 331 cases at Bellevue Hospital, Symmers, Darlington and Bittman[1] have made an attempt to correlate with their necropsy findings the results of the Wassermann reaction taken during the life of a patient. They assert that from 31 to 56 per cent. of patients who, during life, gave a negative Wassermann showed *at necropsy positive evidence of syphilis.* A second assertion is that the Wassermann reaction was positive in 30 per cent. of the cases that showed negative findings at necropsy.

The impression made on the reader of the article is that the Wassermann reaction is not dependable in the diagnosis of syphilitic affections, and of little value as an indication of the cure of the individual affected with syphilis. It is true that physicians who are unacquainted with the technic and the interpretation of the reaction have had reason to criticize the conflicting results obtained in many Wassermann laboratories. These contradictory results, however, are largely due to inexperience, carelessness and the failure to develop a technic based on clinical and serologic correlation. The value of the reaction has been determined by the study of thousands of cases clinically, and by the much slower process of comparing the serologic with the pathologic findings. Before the introduction of the Wassermann reaction, our knowledge of syphilis was chiefly centered on the various types of *skin lesions,* with a very meager knowledge of the visceral manifestations. Since then the rôle of syphilis as a causative agent in producing pathologic changes in various organs has been greatly extended. The incentive to this study was the Wassermann reaction, and today many a syphilitic aortitis would go undiagnosed without the assistance of a serologic test.

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[3] Lynch, J. M., and Draper, J. W.: Am. Jour. Med. Sc., December, 1914, and Publications from Laboratory of Surgical Research, New York University.

* From Pathological Laboratories, City Hospital.

[1] Symmers, Douglas; Darlington, C. G., and Bittman, Helen: The Value of the Wassermann Reaction as Indicated by Postmortem Investigation in Three Hundred and Thirty-One Cases at Bellevue Hospital, The Journal A. M. A., Feb. 2, 1918,

Why has the Wassermann reaction fallen into disrepute with clinicians untrained in the laboratory side of syphilis? A short summary of the history of the reaction may answer this question. Following the technic as originally laid down by Wassermann, the results of the test agreed surprisingly with the clinical diagnosis of the skin lesions in the different stages of the disease. The serologic method was thus hailed as the final word in diagnosing syphilis. When to this was added further information regarding visceral lesions, such as the frequent association of an aortic insufficiency with a positive Wassermann reaction, the enthusiasm knew no bounds. Four factors, however, soon developed which proved a serious complication:

1. The discovery that the reaction was a nonspecific one.
2. The attempt to modify the reaction so as to make it available to the practitioner in his office.
3. The use of reinforced antigens and other changes in technic to render the reaction more sensitive.
4. The practice by some physicians of sending their blood specimens to commercial in preference to recognized hospital laboratories.

The first factor, the discovery that the reaction was a nonspecific one, was a great disappointment. Nevertheless, while we could not explain why alcoholic extracts gave positive fixations with specific serums, the fact remained that such was the case, and after the first storm of skepticism gradually subsided, the explanation was left for the serologist to determine at a future date. The application of the test is another matter.

The second factor, the attempt to modify the reaction so as to make it available to the practitioner in his office, was and is a serious matter. No one hesitates to admit that the practice of serology entails special training; nevertheless it is astounding how quickly makeshift methods are accepted by the profession. The result is apparent, and needs no further comment.

The third factor, the use of reinforced antigens and other changes in technic to render the reaction more sensitive, has been of great interest and value to the serologist, who has a working knowledge of clinical and pathologic syphilis, but a great stumbling block to the general practitioner, or even to the pathologist, who has not the technical training of the serologist. Many of the discrepancies in the various laboratories are due to the lack of standardization in technic. While some adhere to the employment of either plain alcoholic extract antigens or to cholesterinized antigens with the original Wassermann technic, others use alcoholic antigens with icebox fixation, or one of the numerous other known modifications. These modifications that have been introduced have made the name "Wassermann reaction" ambiguous. Today there are hardly two men practicing the same technic, with the result that there are many discrepancies in their final diagnoses. To the syphilographer and the pathologist trained in serology, these discrepancies are more apparent than real. They know that differences will result when the various modifications are employed. With proper controls and an accurate routine technic, however, each known modification (plain alcoholic extracts or reinforced cholesterin antigens, or both, or the icebox fixation method) give results, which, though not always similar, are, at least, of immense value when properly interpreted and correlated in the light of the clinical evidence. A certain percentage of cases give a positive reaction with a cholesterinized antigen and a negative with the icebox fixation method. Another percentage of cases will react positively with plain alcoholic extract antigens, and negatively with cholesterinized antigens. It is the old and treated cases, especially, that give varying results with the different methods employed. In recent cases of florid syphilis the Wassermann reaction is, as a rule, strongly positive with all antigens. It is imperative, therefore, in order to detect old cases of syphilitic infection, that two or more methods be employed synchronously. The use of cholesterin antigens along with plain alcoholic extracts is an advantage, though a positive result with cholesterin antigens with some serologists is much less conclusive. On the other hand, a negative result with cholesterin antigens is much more desirable from the point of view of the patient. Cholesterin antigens and other sensitive methods often give a positive result much earlier with chancres, and in treated cases the positive reaction persists longer in the majority of them. Numerous other facts could be stated to show the necessity of the proper interpretation of the various serologic methods.

We would suggest, therefore, that when an investigator reports the value of a certain serologic procedure he should not be misleading and report it as the "Wassermann reaction," but state definitely the particular method of the complement fixation employed.

The fourth factor, the practice of physicians of sending their blood specimens to commercial in preference to recognized hospital laboratories, pertains to all laboratory work. In our experience there are few such laboratories that deserve serious recognition.

To meet both the favorable and the unfavorable criticisms of the Wassermann reaction, some plan of study must be formulated, in order to give an idea of the absolute value of any serologic procedure in diagnosing syphilis. Each modification of the reaction has its adherents, and unjustifiable claims are made for each method. The proof that any method approaches technical perfection is no evidence in itself that its application is any improvement over another method. The point in question is merely to prove that one particular technic when applied to the diagnosis of syphilis has unquestionable advantages over any other. To what rigid application, then, must this procedure be submitted?

We name the two following requisites:

Requisites for any serologic procedure
- 1. Its value in diagnosing any known syphilitic lesion
    - (*a*) Chancre
    - (*b*) Skin manifestations
    - (*c*) Visceral syphilis
    - (*d*) Neurosyphilis
- 2. Its value in establishing the presence or absence of a syphilitic infection

We have three direct methods at our command to demonstrate syphilitic manifestations in the body: (1) clinical observation; (2) spirochetal demonstration and (3) pathologic study. With a reasonable degree of accuracy we can diagnose clinical syphilitic manifestations, such as chancre, skin lesions, pronounced aortitis, general paresis and tabes. Many other visceral conditions, such as a latent aortitis, and deep gummas of the liver, too often escape the notice of the most accurate clinical observer. The clinician, therefore, can only partially assist, and then only with those manifestations of syphilis that lend themselves to a definite and accurate diagnosis of syphilis. He is more to be relied on, however, for the value of the Wassermann reaction in diagnosing chancre, than is the pathologist.

VALUE OF WASSERMANN REACTION (Cholestrin Antigens with Warm Fixation, and Plain Alcoholic Antigen Icebox Fixation) IN DIAGNOSING CLINICAL CASES OF UNDOUBTED SYPHILIS

In studying the present records of one of us (Fordyce), the value of the Wassermann reaction (cholesterin antigens and alcoholic extracts with icebox fixation) in diagnosing undoubted clinical manifestations of syphilis becomes quite apparent. In primary syphilis the reaction does not become positive until there is a generalization of spirochetes. This occurs before the appearance of the rash, and the reaction may be positive as early as from ten days to two weeks, or as late as from six to eight weeks after the development of the chancre, depending on the antigens and the technic employed in the reaction.

In secondary syphilis the laboratory that employs correct technic will obtain a positive reaction in 100 per cent. of untreated cases. Our records fail to show a single instance of a negative reaction in such individuals.

In 309 cases of tertiary syphilis with manifest lesions of the skin and mucous membranes, the Wassermann reaction was strongly positive in 283, weakly positive in eight, and negative in eighteen. Of the latter, four became strongly positive under treatment. The percentage, therefore, of negative Wassermann reactions in tertiary syphilis with active lesions is about 6.

The results in 112 cases of tabes were as follows: Fifty-two had positive reactions in the blood and in the spinal fluid; thirty-seven were negative in the blood; of these thirty-two had positive fluids; three with positive bloods gave a negative fluid; four were negative in the blood and fluid. In sixteen with a positive blood, the fluid was not examined. The percentage, therefore, of cases of tabes with a negative blood and fluid is less than 4, and as we recognize an abortive form of tabes, it is fair to assume that the negative ones were either cured spontaneously or by treatment.

In paresis, eighty-one cases were examined with positive blood in eighty and positive fluid in all. It is exceptional to find an untreated case with the objective stigmata of paresis that shows either a negative blood or a negative fluid. In taboparesis, twenty-six cases showed a positive blood and positive fluid.

Of cerebral syphilis, other than the types mentioned, twenty-three cases were examined, eighteen of which were positive in the blood, and five were negative in the blood. Seventeen were punctured, of which fifteen were positive and three negative in the fluid. In cerebrospinal syphilis, fifty-seven cases showed a positive blood and fluid; five a positive blood and negative fluid; nineteen a negative blood and positive fluid, and twelve both negative blood and negative fluid. The percentage of cases of cerebrospinal syphilis, especially of the *vascular type*, in which negative Wassermann reactions were obtained in the blood and spinal fluid is larger, therefore, than in any other variety of syphilis. In these cases the administration of mercury and iodids, together with arsphenamin, activates a certain number of apparently negative cases.

SPIROCHETAL DEMONSTRATION

Spirochetal demonstration, however, as a direct method of demonstrating syphilitic infection is the ideal one. With the exception of open skin lesions this method, unfortunately, is hardly available, though Dr. Warthin[2] reports finding them with remarkable constancy in syphilitic organs. No one else, apparently, has been so uniformly successful, excepting with congenital organs, though the literature throughout the scientific world abounds with numerous attempts.

PATHOLOGIC STUDY

Pathologic study, therefore, is the one method at our command for an accurate estimation of the value of any complement fixation test for visceral syphilis. The importance of such a study is not to be denied, and any scientific report must meet all the necessary and critical requirements to make any conclusions drawn beyond a question of doubt. It is for this reason, therefore, that we feel called on to criticize the remarkable deductions of Dr. Symmers and his colleagues. The conclusions drawn are unwarranted and misleading to the practicing profession. To make our claim good it will only be necessary to analyze their report in detail.

We have already stated that the name "Wassermann reaction" is an ambiguous term. It is necessary, therefore, to study separately the value of each complement fixation method. The two distinct points mentioned in regard to the serum reaction are the use of cholesterinized and alcoholic extract antigens. Nothing is said in the article as to the technic employed. This is an unfortunate and serious omission. Ottenberg[3] has shown in an elaborate comparative study of fifteen distinct modifications of the Wassermann reaction in active use in different laboratories that apparently minor variations in technic, such as different methods of determining the dose of complement, different ingredients, variations in time and temperature of incubation, and even the variation of the order in which the reagents are added, as well as the difference in the kind of antigens used, make an enormous difference in the results obtained. For this reason, he pointed out that no discussion of the reaction could be of any value, unless accompanied by an accurate protocol of the method used. Since the various modifications give different results, it is obviously essential in comparing serologic results with pathologic data, that the problem should be a study of the value of all the recognized and type methods of serologic procedure. Only in this way can one arrive at any definite conclusions.

We first review the figures on the alcoholic extract antigens, which we have compiled from the protocol in the article under discussion.

VALUE OF THE WASSERMANN REACTION (Plain Alcoholic Extract Antigens, Warm Fixation) IN DIAGNOSING AN UNDOUBTED SYPHILITIC VISCERAL LESION (Pathologic Study)

A review of the recent literature reveals that the results obtained show a remarkable discrepancy with those reported by Dr. Symmers and his co-workers. Gruber,[4] studying 106 cases of syphilitic aortitis pathologically, obtained 94.3 per cent. positive fixations on postmortem serums when employing alcoholic extract of syphilitic livers as antigen. Curiously enough, in a study of syphilitic aortitis we (Larkin and Levy[5]) obtained identical results (94 per cent.) on antemortem serums, using as antigen the alcoholic extract of guinea-pig heart. From the table submitted by Dr. Symmers and his co-workers, in thirty-two cases of syphilitic aortitis, in which the serum reaction was reported with alcoholic antigens, only 56 per cent. of the serums gave positive reactions. In all cases, with so-called positive lesions of syphilis they obtained the strikingly low figure of 53.8 per cent. positive reactions with the alcoholic extracts. The reasons for this we can only suggest. To criticize a serum test that is not described is, of course, difficult. Nevertheless, if others can obtain much better results with identical antigens, one must assume that some error in the technic is responsible, and that better serologic results should have been obtained. On the other hand, can we question the pathologic diagnoses? Though the gross picture of syphilitic aortitis is characteristic, and can often be diagnosed by the naked eye, nevertheless arteriosclerotic changes may so obscure the picture that the diagnosis may be extremely difficult, and could be made only by histologic examination. No mention that this was done is made. Further, the possibility of error in the diagnosis is quite apparent from the fact that the organs were not all personally studied by the authors, but the data as given on the records accepted, in some cases, as final. The fallacy of such a procedure for detailed study of any subject is not to be denied.

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[2] Warthin, A. S.: The Persistence of Active Lesions and Spirochetes in the Tissues of Clinically Inactive or "Cured" Syphilis, Am. Jour. Med. Sc., 1916, **152**, 508.

[3] Ottenberg, Reuben: On the Reliability of the Wassermann Reaction, Arch. Int. Med., March, 1917, p. 456.

VALUE OF A POSITIVE WASSERMANN REACTION (Plain Alcoholic Antigen, Warm Fixation) IN ESTABLISHING THE PRESENCE OF A SYPHILITIC INFECTION

In considering cases with positive serum reaction, which showed on postmortem examination the presence or absence of specific changes, again one finds results that do not agree with the experience of others. Using alcoholic extract antigens, Dr. Symmers and his co-workers found that in fifteen cases with positive serum reactions, only 75 per cent. revealed postmortem evidence of syphilis; we (Larkin and Levy[5]) in seventeen cases were able to find evidence of syphilis "in the aorta alone" in 90 per cent. of the cases. It is stated that "we shall hope not to leave it to be read between the lines that our technic has precipitated certain exceedingly regrettable mistakes." It is self evident, however, that there have been, at least, omissions of acute observation and study of the pathologic material and the recent literature on the subject. In the article space is devoted to a discussion of the failure of spirochetal demonstration, and not a word is mentioned as to the histologic examination of organs in search of the presence of syphilis. The fallacy of diagnosing the absence of syphilitic infection merely by gross examination of organs has been pointed out by several workers. It is now a matter of general knowledge that syphilis incites a productive inflammatory reaction, which, only in certain organs, is characteristic and diagnostic, and that these changes may be present in an organ without producing any gross manifestations discernible by the naked eye. We (Larkin and Levy[5]) have reported evidence of this both in the aorta and the nervous system. Dr. Larkin has in his collection type cases, such as the following:

> A woman, aged 26, died of a cardiac condition, with positive serum reaction before death. At necropsy the heart showed evidence of an infectious endocarditis. The aorta appeared normal. But on histologic examination the diagnosis of syphilis was unquestioned.
>
> In a patient dying of a ruptured aneurysm, the spinal fluid had given positive findings antemortem. Gross examination of the cord and brain revealed nothing abnormal. After a painstaking and exhaustive histologic examination an early sclerosis of the posterior nerve root ganglion cells was found.

In view of these facts, it is easy to understand the surprisingly low percentage which Dr. Symmers and his co-workers found when checking up the positive serum reactions with evidence of syphilis at necropsy. Those cases in the protocol which have been designated as having "no signs of syphilis" might very well reveal histologic changes in the aorta that are pathognomonic of syphilis, though to the naked eye the aorta may appear normal.

No mention is made of the possibility of dealing with latent syphilis in reporting such a high percentage of positive serums in apparently normal individuals. Neither is there any report given of spinal fluid examination, or findings in the brain and cord. One might, therefore, suspect a latent infection, or draw the conclusion that normal serums were examined with a highly sensitive cholesterin antigen, since the majority examined with an alcoholic extract antigen gave a negative result, and that false positives were obtained. To exclude syphilis at necropsy beyond a question of doubt would mean an amount of work that is physically impossible in the laboratories connected with the pathologic departments of the various hospitals. It would be necessary, in the first place, to exclude involvement of the nervous system, which, in a certain percentage of cases, shows involvement, even in the absence of visceral syphilis. It is well known that shortly after the appearance of the initial lesion in experimental and acquired syphilis, the lymph nodes, bone marrow and spleen may harbor spirochetes, and from our knowledge of the syphilitic process it is fair to assume that in certain cases these organisms may persist in these regions for an indefinite length of time. Have the authors of "The Value of the Wassermann Reaction" examined the lymph nodes, the bone marrow and the various other possible sites of spirochetal selection in their necropsy work?

If, in the four cases in which Dr. Symmers and his colleagues found no evidence of syphilis, an examination, microscopically, of the aortas alone had been made, the conclusions arrived at might have been different. A positive diagnosis in two of these four cases may have given a percentage approximating the 90 per cent. found by us.

CHOLESTERIN ANTIGENS

In studying the results of the cholesterin antigens, as tabulated in the protocol, one cannot but help seriously questioning the accuracy of the serum reactions. In a series of fifty-one cases, in which both antigens were employed, identical reactions were obtained in only fifteen cases. In other words, there was a discrepancy in 70 per cent. of the cases. It is obvious that the technic employed with one or the other of the antigens (if not with both) was faulty. Practically no other worker who has compared the two antigens has obtained anywhere nearly so large a discrepancy. Ottenberg[6] has found not more than 15 per cent. difference.

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[4] Gruber: Ueber die Doehle-Heller'sche Aortitis, Jena, 1914.

[5] Larkin, J. H., and Levy, I. J.: A Pathological Study of Syphilitic Aortitis and Its Serology, Jour. Exper. Med., 1916, 23, 25.

On analyzing the results of the cholesterin antigens with the necropsy findings, we note, when summing up all the positive cholesterin reactions (that is, positive, strongly positive and very strongly positive) that only 47 per cent of the reactions had postmortem evidence of syphilis. We[5] accounted for 77 per cent. of our positive reactions by histologic examination of the aorta alone. Again we must assume faulty technic in performing the serum tests, or careless and inaccurate pathologic observation.

In regard to the statement that "the Wassermann reaction in the living patient is positive in at least 30 per cent. of the cases in which it is not possible to demonstrate any of the anatomic lesions of syphilis," the lack of appreciation of the existence of the several methods of performing the Wassermann reaction is evident. We have here an average of the results obtained by using two widely different serologic methods, instead of noting definitely the results obtained by each method. If we should employ this fallacy we would have 17 per cent. of our positive reactions unaccounted for by syphilitic changes in the aorta (the average of 10 per cent. alcoholic extract antigens and 23 per cent. cholesterin antigens).

VALUE OF A NEGATIVE WASSERMANN REACTION (PLAIN ALCOHOLIC EXTRACT ANTIGEN) IN ESTABLISHING THE ABSENCE OF A SYPHILITIC INFECTION

(FROM PRESENT DATA)

One could have accepted the study of Dr. Symmers and his co-workers as a fair attempt to correlate positive serum reactions with postmortem findings, if they had not drawn such definite conclusions, and at the same time felt called on to give the practitioner such revolutionary advice about the Wassermann reaction. Surely when they discovered the positive phase of the reaction was so misleading and confusing, a negative result, on the other hand, may at least be of some value. This they apparently omitted to consider. To condemn a laboratory procedure on data not complete and comprehensive is a fallacy that is not altogether pardonable. By other men, however, the negative phase of the reaction has been touched on; and, surprising as it may seem, suggests that a negative Wassermann reaction is of certain value in eliminating the presence of syphilis.

In a study of twenty-four aortas, in which there was no perivascular infiltration, the serums, antemortem, of these patients gave a negative reaction in twenty-two (Larkin and Levy[5]). In a comprehensive study of all the organs of the two positive serologically we might have been successful in finding pathognomonic evidence of syphilis. This, however, was not done. Nevertheless, in the study of the aorta alone the absence of syphilitic infection gives a negative reaction in probably about 91 per cent. of the cases (Larkin and Levy[5]).

QUESTIONABLE SYPHILITIC PATHOLOGIC DIAGNOSES

Further, in studying the protocol of Dr. Symmers and his colleagues, we find under "Necropsy Findings" the following: "No signs of syphilis, smooth indurative atrophy of the tongue, syphilitic orchitis, syphilitic osteitis, scars on shin," etc. The authors admit the difficulty of interpreting syphilitic changes in organs of syphilitic individuals. They fail to recognize the fact, however, that in estimating the value of any laboratory procedure in diagnosing the etiology of pathologic changes in organs that this etiologic factor must produce physical changes in organs that are characteristic and pathognomonic, and these changes must be present with a fair degree of constancy. The reverse is true in the absence of the infectious agent. It is a great fallacy to diagnose the presence of syphilitic infection by physical changes in organs that are not of undoubted syphilitic origin. It is just as great a mistake to negate syphilitic infection, unless there is a thorough search, microscopically, for the characteristic physical changes produced by syphilis. The conclusion "no signs of syphilis" has no meaning, unless we are assured of such an inspection.

Dr. Symmers,[7] individually, on two or three previous occasions, and now with his collaborators,[1] warns the clinician, and advises distrust in the use of the Wassermann reaction. He forgets that the most constant symptom of syphilis is a positive Wassermann reaction. The folly of insisting on the importance of a healed scar on the penis, atrophic pigmented scars in the pretibial region, or a roughening of the anterior border of the tibia as diagnostic phases of syphilis is too evident to all syphilographers. That syphilis may produce these lesions has been known for years; but other infections often are causative factors. Tuberculosis, chancroidal ulcers and pyodermias may lead to scarring of the genital organs. We frequently see pigmented scars in the pretibial skin due to ecthyma, tuberculous ulceration and to infected injuries, which present all of the characteristics of syphilitic scars. And when one recalls the invariable absence of these signs in practically every known phase of syphilis, one wonders if Dr. Symmers is asking us to take a step backward to the dark ages for our method of the diagnosis of syphilis. The same applies to superficial lymphadenopathy. Increased consistency and diminished sensitiveness of one or both testes would scarcely appeal to the clinician as an evidence of syphilis of these organs. Leukoplakia of the mouth and tongue is by no means the invariable consequence of syphilis. It is frequently seen in individuals who have never been infected. Syphilitic orchitis and syphilitic osteitis suggest physical changes in these organs, the etiologic factor of which could easily be questioned. Scars on the skin present nothing characteristic to prove that they are of syphilitic origin, though they very well could be considered as evidence. Scars of old syphilis may exist at necropsy in persons in whom the spirochetes and infection had disappeared. These persons may have suffered from syphilis, but the scar is the end-result of a syphilitic process. We not infrequently see patients with multiple scarring of the skin, pigmentation or characteristic changes in the mucosa, who are cured of their infection.

Before classifying necropsy cases as showing positive evidence of syphilis, it is exceedingly important to distinguish between active progressive lesions or healed and nonprogressive ones. We should also have the data as to the influence of treatment before the

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[6] Verbal communication.

[7] Symmers, Douglas: Anatomic Lesions in Late Acquired Syphilis, The Journal A. M. A., May 6, 1916, p. 1457; Syphilis as an Etiological Factor in Laennec's Atrophic Cirrhosis of the Liver, Internat. Clin., 1917, 1, 58.

Wassermann reaction was taken. Dr. Symmers and his colleagues apparently ignored entirely the amount of treatment that any of the cases reported with positive clinical evidence may have received. Surely they must be familiar with the fact that reversal of the reaction may occur *after therapeutic* administration, though anatomic residua may persist.

Lichen planus, tuberculosis, *lupus erythematosus*, and pemphigus of the mouth and tongue may at times *closely simulate* the syphilitic process, and can be differentiated only by a careful correlation of the clinical manifestations aided by the Wassermann reaction. We (Fordyce) have seen in our clinical and pathologic work fully as many errors made by relying on the clinical signs as we have seen made by a wrong interpretation of the Wassermann reaction, if not more.

As an evidence of the persistence of spirochetes in the body, and as a guide to cure, the Wassermann reaction is of vastly more importance than the clinical observation alone. We have seen in the past years many patients treated by the old clinicians and discharged as cured of their syphilitic infection, who have returned with involvement of the central nervous system, cardiovascular system and other syphilitic affections revealed by a positive Wassermann reaction and objective evidences of the disease. If these patients at that time had been properly controlled by the serologic tests, it is fair to assume that a large percentage of them would have been cured of their infection.

After the earnest endeavors made to teach the proper evaluation of the Wassermann reaction, it would be a great pity if the article by Dr. Symmers and his colleagues were taken too seriously by that part of the profession which has not had the proper training in both laboratory and clinical interpretation. The impetus given to the study of neurosyphilis has been based largely on the findings in the spinal fluid, especially in the secondary stage of syphilis. Without the Wassermann reaction and the training necessary to interpret its significance, many patients who are positive serologically only in the spinal fluid would be denied the treatment that will cure their condition, and will be permitted to develop the various chronic nervous diseases, such as tabes and paresis, as in the past.

The old rule, too, which related to the marriage of syphilitics often led to the most disastrous consequences. A patient under the old clinicians was given permission to marry from thee to five years after his syphilitic infection, if he had been free from symptoms during one year before marriage. We have seen a number of men acting on such advice, who married from five to eight years after their syphilitic infection, transmit syphilis to their offspring. On the contrary, we have known a number of instances in which persons, cured by modern methods, married two years after their infection and procreated healthy children. In the latter group of cases a cure was obtained serologically; in the former group, only a so-called clinical cure had been brought about. The Wassermann reaction, therefore, as a guide to marriage is of vastly more importance than the element of time.

The article by Dr. Symmers and his colleagues is, in our opinion, filled with erroneous deductions; and so far as it tends to discredit the value of the Wassermann reaction as a guide to the existence of syphilis and as a criterion of cure, it will mislead that part of the profession which is not trained to interpret and correlate laboratory and clinical findings, and is easily influenced by work carried out in institutions of the dignity and age of Bellevue Hospital.

REQUISITES FOR SEROLOGIC PROCEDURE

- Requisites for *any* serologic procedure
  - Its value in diagnosing any known syphilitic lesion
    - Clinical cases of undoubted syphilis (Cholesterin antigen; warm fixation) and (Plain alcoholic extract, icebox fixation)
      - Chancre: 95 - 100% positive reactions, depending on age of lesion
      - Secondary syphilis: *100% positive* reactions
      - Tertiary syphilis: 94% positive reactions (late skin and mucous membrane manifestations)
      - Neurosyphilis:
        - Paresis: 99% *positive* reactions *(blood* and spinal fluid) 81 cases
        - Tabes: 50% positive reactions (blood and spinal fluid), 96% *positive reactions* (blood or *spinal* fluid), 60% positive reactions *(blood)*
      - (Cerebral syphilis)
    - Visceral lesions Pathological study (Plain alcoholic extract antigen; warm fixation)
      - Aortitis: 94% positive reactions
  - *Its value in establishing* the presence or absence of a syphilitic *affection*
    - *Value of a positive* Wassermann reaction in establishing the *presence* of a syphilitic affection (pathologic study)
      - Alcoholic extract antigen: Percentage of reactions showing evidence of *syphilis: in* the aorta, 90%
      - Cholesterin antigen: In the aorta, *77%*
    - Value of a negative Wassermann reaction in establishing the absence of a syphilitic affection
      - No definite figures are obtainable:
        - (a) Reliability confirmed by the negative reaction obtained in nonspecific skin lesions
        - (b) In a series of aortas free from syphilitic disease the serum, antemortem, was negative in *91.5%* of cases

SUMMARY

The term "Wassermann reaction" includes several methods of serologic procedure. An accurate interpretation of each method is essential in arriving at a proper diagnosis.

A positive reaction is the most constant symptom of syphilis.

The value of the reaction in diagnosing undoubted syphilis is shown by the fact that:

1. The reaction is positive in practically 100 per cent. of the cases of florid syphilis.
2. In active tertiary syphilis of the skin and bones the reaction is positive in about 94 per cent. of the cases.
3. In syphilis of the central nervous system, cognizance must be taken of the reaction in both blood and spinal fluid. The blood is positive in about 80 per cent. of the cases.
4. In a pathologic study, the Wassermann reaction (alcoholic antigen, warm fixation) was positive in 94 per cent. of cases of syphilitic aortitis.

As a means of corroborating syphilitic infection, the Wassermann test is at least 90 per cent. dependable, as shown in a series of positive reactions in which 90 per cent. could be accounted for by syphilitic changes in the aorta alone.

The value of a negative reaction has been studied and its reliability confirmed by the negative reactions obtained in nonsyphilitic affections of the skin. In a series of necropsies in which it was demonstrated pathologically that the aorta was free from syphilitic disease, negative reactions were obtained in 91 per cent.

The conclusions of Dr. Symmers and his co-workers are shown to be fallacious and a misrepresentation of facts owing to:

1. The apparent disregard of the different results obtained by various serologic methods and the employment of a questionable technic.
2. The careless survey of pathologic material.

PRIMARY UNILATERAL OPTIC ATROPHY IN A CHILD, FOLLOWING FRACTURE OF THE SKULL

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PHILADELPHIA

REPORT OF CASE

M. S., girl, aged 4 years, was sent to me for examination by Dr. Nichols, April 14, 1918. The child had been run down by a motor truck and knocked unconscious, November 10. She was taken to the Polyclinic Hospital. The hospital record shows that she was still unconscious when she got there. There was bleeding from the nose and ears. The right eye was swollen and chemosed so that the pupillary reaction could not be noticed, but the left pupil reacted well. Roentgenoscopy revealed a fracture of the base of the skull as well as the frontal bone into the frontal sinus. The child was in the hospital four weeks and discharged. There was no ophthalmoscopic examination made. When I saw the child about five months later, I found the following ocular condition: right pupil 3 mm., left pupil 2 mm., reaction in right eye sluggish. There was slight muscular deviation showing an insufficiency of the right internal rectus muscle. Ophthalmoscopic examination (under a mydriatic) revealed the media clear, the disk well defined, somewhat excavated and bluish pale, and the retina normal. Though the child was too young for visual examination, I made the following successful tests: When I held a pencil to the left beyond the median line, the child could see it without turning its head. But when I held the pencil to the right beyond the median line, the child had to make a compensatory head movement to see the pencil, indicating that the right eye was probably highly reduced in visual acuity. I then tied the left eye and asked the child to find the father, who was present at the examination. The child attempted to comply and walked into the chair and into the table standing near by. A diagnosis was made of primary optic atrophy caused by the fracture of the skull.

COMMENT

Primary optic atrophy in children is very rare. In adults it is seen not infrequently in tabes, multiple sclerosis and cerebrospinal syphilis. It may even be the first sign that leads one to suspect tabes or cerebrospinal syphilis. Of course, this form of atrophy, when of constitutional origin, is usually bilateral, affecting both eyes simultaneously or at an interval of a short period. Whenever we find a unilateral primary optic atrophy, we must always think of a possible injury to the skull. Primary atrophy in children probably never occurs as a constitutional condition, but may be caused by trauma. This trauma may affect the optic nerve directly, causing disorders such as laceration of the optic nerve, or indirectly, as a result of some pressure resulting from the injury. The pressure exerted on the nerve in unilateral atrophy is usually anterior to the chiasm and is due to hemorrhage. The hemorrhage may be in the orbital cavity, flowing into the sheath of the optic nerve. The fracture may, of course, also involve the orbital bones. The prognosis in these cases is very grave, as they usually lead to blindness. I saw this patient five months after the injury, so I do not know when the atrophy began. As I have nowhere seen any record of primary atrophy of the optic nerve in a child so young, the case deserves to be recorded.

917 Spruce Street.

Military Medicine and Surgery

ALL YEAR MEDICAL STUDY AND THE EDUCATION OF MEDICAL OFFICERS

GEORGE DOCK, M.D.
ST. LOUIS

We in America should be used to making changes in the medical course. We have seen the benefits from rearranging; we are hospitable to new proposals. Do we discuss such proposals as freely as they deserve?

This thought is raised by the paper read by Major H. D. Arnold[1] at the Conference on Medical Education, held in Chicago in February.

Major Arnold's plan, in brief, is to compress medical education into three years, in such a way that next year classes will be graduated four months ahead of the schedule, and each succeeding year another four months earlier, up to the end of three years.

There was very little discussion over this novel plan. Many of those who spoke left the main subject and dilated on the waste of time in vacations by teachers and students, the extravagance of empty class rooms, etc.

As it offers so many different advantages, it will not be surprising if Major Arnold's plan, with or without modifications, is put into effect. If so, I am sure all medical educators will do their best to make it a success. Nevertheless, I believe it may be useful to discuss some of the details, whether it is adopted or not, for they illustrate some important phases of education.

All will agree with Major Arnold that the present standard in medical education must be kept up, and that no concession should be made to those who raise the specious plea of war need, to lower the standards of entrance and of graduation.

No doubt many medical teachers will approve the control over medical schools exercised by the Surgeon-General of the Army (though there seems no reason why the Navy and the Public Health Services should not be concerned), and hope that in time some equally powerful authority will deal with secondary education. Seeing, too, that the federal government will have to supervise medical studies from the beginning, one must hope that it will soon be brought to see the necessity for universal service.

Here a comment may be made on one item of Major Arnold's address — that in which he contrasted the medical student and his long vacation with the soldier and his constant service. The comparison seems unfair. The medical student's work is always fairly strenuous; soldiers do have periods of idleness. Soldiers occasionally have furloughs; Major Arnold's plan would not permit anything like furloughs to medical students. In another point the treatment of the medical student seems unfair — if he cannot keep up with his class he is sent to the ranks. He could not complain if all were treated alike; but why not apply the same rule to professional loafers, the large class of low parasites, the "workmen" whose "helpers" do all their short stint, and those who strike for frivolous reasons?

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[1] Arnold, H. D.: Medical Education, Medical Interns and the War, The Journal A. M. A., Feb. 16, 1918, p. 451.

In the discussion of Major Arnold's plan one can touch two distinct topics — compression of the course from four to three years, purely as a war measure, and teaching all the year round, without any connection with war, but as a means of using buildings and apparatus more economically. The latter may be considered first, as a sort of amendment to an original motion. Much that has been said about continuous teaching is the by-product of the irrational plan we have worked into in the last third of a century. The "nine months course" — really about eight in most schools — has been made the ideal. No doubt the college term had most to do with the plan, and this left the hot summer months vacant. It gave a longer study time than that adopted in some other countries, and if a long term is the best way to cover much work, one could forgive a plan that made the term otherwise rigid and unpractical. A little consideration of the facts will show that a longer term does not necessarily mean more work.

In the Central Empires the total official course is about seven months, but much of the best work is done in the vacations of two or two and a half to three months. Many laboratory and other practical courses are then given. No one thinks of closing up laboratories. Those who wish to work for a month or even a whole vacation can arrange to do so, and many men, of all ranks, go away to work in other laboratories with different men. This is one incentive to the migration that so widens the intellectual horizon of the undergraduate. An excellent opportunity also is given to teachers for seeing the work of one's colleagues in their own or in allied fields. The official work in the summer semester ends there in the middle of July. Our summer vacation is so timed that not enough cool weather is available at either end, in many places, for serious work. In some places the time from the middle of June to the end of July could easily be used for practical or intensive didactic courses; in others, all of September; in still others, both periods. But almost anywhere in the United States the continental division of time could be followed.

Those who took their undergraduate work in this country before the nine months' plan was adopted must wonder at the idea consciously or unconsciously suggested by those who now speak for long terms. In those early days there was plenty of work, and all who hoped to make themselves useful took special courses that quite made up a nine months' course.

Absence of necessary relations between length of term and amount of work done per year was recognized outside of medical schools. I have recently heard that the University of Toronto had a seven months' course, but all students who tried for honors worked most of the remaining five months, and my informant, a prominent humanist, tells me that his best work was done when he read at night and thought over his reading next day behind the plow.

The idea that study or other work is done only in school time has, I think, a close relation with another idea too widely held — that study ends at commencement time. Overcoming this belief will open a new intellectual world.

To recapitulate the foregoing, it is better to have two (at least) terms than one; better to have two vacations a year than one, provided the shortest is not less than six weeks. Such terms would facilitate migration by undergraduates, and visiting or exchange among investigators as well as teachers of all grades.

I am quite prepared to hear objections raised to these proposals, but these objections will merely indicate the Chinafication that has impressed itself on us as a nation in other lines besides medical education.

A different method from that mentioned has been in existence more than a quarter of a century in the University of Chicago, as was stated by several speakers at the conference. In the quarterly system the continued use of the plant is secured, and although the scheme is not so elastic as the continental plan, it gives the teacher, within certain limits, an opportunity of taking time off when he can do something more than what is offered by summer vacation, and gives the undergraduate a chance for migration, though with little hope of getting what he wants without loss of time, as long as there are no other schools with identical terms.

As to the matter of compressing work into three years as a war measure, the question whether state laws would permit such a change seems hardly worth discussing in war time.

The lack of vacations for the teachers is not to be looked on as serious. The teachers who remain at home are for the most part hardened; they do not all get vacations now; they can forego extensive time for private research even during a long war. The younger graduates, who should be doing the most active research work, are all away working at special subjects. The undergraduates can stand the continuous work. Many of them work all summer as it is, and did so in peace time. That they can do as well under the proposed plan I do not believe, but the experiment would be useful. Even those who before the war worked in summer had a change, had the stimulus of new surroundings in hospitals or elsewhere, and had time to digest what had been taken in large and often indigestible quantities in the preceding term. Under the new plan there will be less chance to make up for inevitable deficiencies in class work, and the suggestion by Major Arnold of a period for making up cannot easily be fitted in with the swift tempo of all year round work.

The division of the year into three terms of four months each will not lend itself to the schemes now successfully followed in some medical schools in which intensive clinical work is taken for periods of three months. The quarterly system would be much better in that respect, and would of course bring about an equally rapid production of graduates.

To my mind the most serious fault in the scheme is what it overlooks in physical training and military training. Medical students even now are not able to take as much exercise or athletic work as men in other departments. With a continuous term I think the outlook would be even worse. Men would therefore leave the medical school, go at once into a hospital or laboratory for a year, and then, without a pause, at the age of 25 or 26, begin the severe physical and mental work of Army surgeons.

In the past year it has been shown that medical officers require from three to eight months to get broken into their duties. It would seem much more rational, on physical and technical grounds, to prepare for military life gradually, following a plan that was suggested at the conference but was not discussed.

Let the colleges retain their present terms until a better plan can be adopted. Send all medical students, about the middle of June, to camps of instruction and keep them there until a week or two before the fall term. In the first summer let the training be physical and military. The latter not to make soldiers, but to give knowledge of the soldier's activities and the soldier's "smartness" to the future medical officer. Setting-up drill, sports, swimming, riding, fencing and rifle and revolver practice could be learned, with the school of the soldier. The training then begun would never be forgotten.

In the second summer put the men in hospitals at training camps. Continue exercise, and train in the work of hospital orderlies, so as better to teach others. Many medical officers do not know how a stretcher should be carried or how a patient is put from a stretcher on a bed. Part of the "paper work" could also be learned at this time. Tedious as this work is, it is necessary, and much less tedious if really known.

In the third year, also in hospitals, as assistants, the more medical duties as well as "paper work" could be finished, with exercises and sports as before.

At the end of the intern year the young medical officer could at once take up his work, and be physically, militarily and medically much more useful than he is now.

The training could be much less costly than at present. Undergraduates would have the status and pay of enlisted men. Healing of accidents, such as broken bones and loss of time from appendicitis or hernia operations would not be so costly as at present.

It has been objected that it would be expensive to send medical students off to camps. It should not be. Most medical schools are near war camps. Inaccessible desert camps need not be used, and even if some expense is entailed by traveling, the amount would be trifling in the total cost of military training.

Medical Journalism in Mexico.—The medical journals have had a hard time of it in Mexico during the unrest of the last few years, and few numbers have been issued. Among them have been the *Escuela Medico-Militar* and the *Gaceta Medica de Mexico*, the official organ of the National Academy of Medicine, which condensed six months' transactions into the one issue reviewed in The Journal, Feb. 2, 1918, p. 351. An arrangement has recently been perfected with *El Universal*, a daily newspaper of the city of Mexico, which devotes one of its Saturday pages to scientific medicine, giving the official, signed report of the proceedings of the Academia Nacional de Medicina, translations of important medical articles appearing in other languages, and news of interest to the profession throughout Central and South America. This "Saturday Medical Page" is in charge of Dr. A. B. Vasconcelos, and he hopes to make it a scientific forum for the profession in Mexico and elsewhere. Some of the articles in The Journal and in the *American Journal of Diseases of Children* have already been reproduced, as also the notice sent out by the Secretary of the American Medical Association to the physicians of Mexico inviting them to be present at the annual meeting of the Association in June at Chicago.

REPORT ON PROGRESS OF TRENCH FEVER INVESTIGATIONS

TRENCH FEVER COMMISSION OF MEDICAL RESEARCH COMMITTEE, AMERICAN RED CROSS *

Majors R. P. Strong, Homer F. Swift and E. L. Opie; Captains
Ward J. MacNeal, Walter Baetjer and A. M. Pappenheimer,
M. R. C., U. S. Army, and Lieutenant A. D.
Peacock, R. A. M. C. (T.)

At the first meeting of the Medical Research Committee of the A. R. C., held in October, 1917, and presided over by Major Alexander Lambert, Chief Surgeon, American Red Cross, one of us[1] suggested the subject of the transmission of trench fever as being one of the most important for investigation in connection with the loss of man-power in some of the armies on the western front, and as being a more urgent problem for study in connection with the prevention of this disease than that of its etiology, the latter problem having already been studied extensively. It was requested that a statement be submitted at the next meeting of the committee regarding our present knowledge of this disease. This report was submitted at the meeting of the Research Committee held in November, and was published in the *Medical Bulletin* of the A. R. C. for December. Following the reading of this report it was voted that the subject of the method of transmission of the disease, and an investigation regarding the infectious properties of the blood in trench fever, were important problems for investigation, and that such investigations should be undertaken. A trench fever committee, consisting of Majors Cushing, Swift and Strong, was therefore appointed. At this and at subsequent meetings, one of us[1] was asked to plan and take charge of the work, select the personnel, and begin the experiments as soon as possible.

Major Cushing was asked (in November) to confer with the British authorities in reference to cooperation on these investigations, and to see if either the services of Mr. Bacot of the Lister Institute, or of Lieut. A. D. Peacock, R. A. M. C., could be secured to help in the work.[2] He received considerable encouragement from Col. T. R. Elliot, R. A. M. C., and Gen. Sir Wilmot Herringham later wrote inviting one of us to attend a meeting of the Medical Investigation Committee of the B. E. F., held Dec. 8, 1917. There were present at this meeting Col. Sir William Leishman, chairman, Major-Gen. Sir John Rose Bradford, Major-Gen. Sir Wilmot Herringham, and Col. W. O. Beveridge. This committee then voted to accept our offer of assistance in the study of trench fever, and after some discussion agreed to turn over to us for investigation two subjects; first, the method of transmission of the disease, and, second, the question of the infectious properties of the blood, with a view to repeating and confirming if possible the previous work of Major McNee, R. A. M. C.

It was finally arranged, on the recommendation of Gen. Sir William Macpherson, A. D. G. M. S., by Field Marshal Sir Douglas Haig, the commander-in-chief of the British armies in France, and General Pershing, the commanding general of the American Expeditionary Forces, that this work should be carried on at a stationary hospital of the B. E. F. which was near enough to the line, where cases of trench fever in the very early stages of the disease could be secured. Perhaps the most important problem was the securing of volunteers for the experiments, for, since the disease could not be transmitted to animals, it was clear that unless volunteers were secured, the experiments could not be performed. Col. M. W. Ireland, U. S. M. C., successfully undertook this task, and the commander-in-chief of our army, December 22, gave permission to General Bradley, our chief surgeon, to have these experiments made on volunteers from the American army, provided, as Colonel Ireland had outlined, that each volunteer was to have it carefully explained to him what he was volunteering for, and that after this explanation he should sign a paper that he was willing to undergo the experiment.

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* Read by Major R. P. Strong, March 15, 1918, at the Pasteur Institute, Paris, at the meeting of the Medical Research Committee of the American Red Cross. A similar report of the scientific results was presented at the meeting of the Inter-Allied Sanitary Conference, Paris, March 13, 1918, and is preserved in the archives of that commission.

* Reprinted from the American Red Cross Medical Bulletin, March, 1918.

[1] Major Strong.

[2] The services of Lieutenant Peacock were secured, Jan. 26, 1918.

In the meantime the necessary equipment with which to carry on the work had been selected and gathered together in Paris, the funds for the purchase of the same being supplied by the A. R. C. through the instructions of Major Lambert, its chief surgeon. The laboratory apparatus and supplies, tents, lumber for latrines, ablution chambers, flooring, drainage and water pipes, window glass, etc., were shortly afterward received at the stationary hospital where the experiments were to be carried on. Sixty volunteers from the U. S. Army arrived a few days later and eight others subsequently.

The first week was occupied largely in the examination of the volunteers and in converting the empty hut supplied us into a laboratory, in erecting tents, and in building latrines, ablution chambers, construction of drains, etc., in which work we were greatly assisted by the British personnel of the hospital. Clinical histories of the volunteers were taken, physical examination made, and bacteriologic and serologic examinations of the blood, urine and feces performed, in order that complete records of the men might be available before the experiments were made. All the men used in the experiments were healthy and robust.

Four-hourly temperature charts were kept of all of them from the date of their arrival. A plan for semiweekly inspection and bath, and for complete sterilization of clothing once a week, was arranged, and other precautions were taken to prevent the men from becoming lousy by natural means during their station at this hospital. In order that the results obtained in the experiments should be unquestioned, the men of the detachment also were segregated from the B. E. F. hospital personnel and patients.

The experiments were conducted on the plan already described at a previous meeting, relating to the subjects of the transmission of the disease and of the determination as to whether the organism causing it was situated in the blood, and particularly in the blood cells, as had been previously reported.

Thirty-four men have been employed in the blood inoculation experiments, and these have been inoculated either with blood or some constituent element of it taken from trench fever cases in the febrile stage of the disease. Of these, twenty-three have developed typical trench fever. Sixteen of these were inoculated with whole blood, of which number fifteen have developed the disease. The number of individuals inoculated with whole blood may seem large, but it should be observed in this connection that in every series of the experiments it was necessary to determine at the time the presence of the virulent organism in the trench fever blood employed. Unless its presence could be demonstrated in the whole blood used at the time and under the conditions of the other experiments, no conclusions could be drawn regarding its apparent absence in any part of the blood or in filtrates of it.

Five individuals were inoculated with clear unfiltered plasma of the blood, free from cells, all of whom have contracted the disease; four were inoculated with washed corpuscles, of whom three have developed trench fever; five with plasma or serum filtered through Berkefeld filters, of whom none have contracted the disease; and two with extracts of ground corpuscles, filtered through Berkefeld filters, of whom none have contracted the disease. From these experiments it is evident that the organism causing the diesase is present in the blood and particularly in the plasma of the blood. It is also evident that it may be centrifuged down with the corpuscles of the blood and is not washed free from them by saline solution, but sometimes appears to adhere to them in sufficient quantity to produce the disease after injection of the corpuscles. The organism is perhaps also brought down by the fibrin meshwork of the clot when the clotted blood is centrifuged. From the experiments performed up to this time it would appear that the organism is either not present in the filtrates or at least is not present in sufficient amount, or in proper condition, to produce the disease following inoculation. It may remain behind or in the filter, in which case it is probably of sufficient size to be visible under the microscope under certain conditions or during some stage of its life history.

The incubation period of the disease produced by inoculation with blood varies from 5 to 20 days. Of 20 cases inoculated with whole blood or plasma: in 9 cases it was 5 days; in 4 cases, 6 days; in 2 cases, 7 days; in 1 case, 9 days; in 2 cases, 13 days; in 1 case, 19 days, and 1 case, 20 days. In those cases, with one exception, in which the incubation period was long (2 cases of 13 days and 1 of 20 days) the individuals were inoculated with blood either taken late in the disease (sixth or seventh day) or during the relapse of the fever. The blood appears from the inoculation experiments to be most infectious on the first and second days of the disease, and more infectious during the first attack than during the relapse. In the first series of inoculations the blood was taken from seven cases of trench fever occurring naturally in members of the B. E. F. and was injected from each case into a single American volunteer. All of the seven volunteers developed the disease. The organism causing the disease has in addition been carried from three trench fever cases through three more generations in man from the original case in three series of experiments.

In the inoculation experiments, varying susceptibility to the disease and relative immunity of some individuals are demonstrated by the length of the incubation period, the severity of the attack, and even, in one instance, by failure, so far, to develop trench fever. With reference to these instances of relative immunity by parallel experiments, it was shown that the organism was at the time alive and sufficiently virulent in the blood to infect other individuals in a shorter time, while the more immune individuals inoculated at the same time developed the disease later, or, in one instance, has remained healthy.

In relation to transmission of the disease by the louse *Pediculus corporis*, twenty-six men have been subjected to experiment. Of these, twenty-two have harbored lice which have bitten trench fever patients in the febrile stages of the disease, and the remainder have harbored, for the same period of time, normal, uninfected lice which have not bitten trench fever patients. Eight other volunteers living under exactly the same conditions as those contracting trench fever and kept free from lice, as well as the four controls bitten or infested by normal uninfected lice, have all remained healthy. In the great majority of the experiments the lice were pure bred and were hatched from ova brought from England.

We have previously reported the method of infection, but it may be advisable to repeat here that three groups of lice, numbering from twenty-five to 100 adult lice each, have been placed on the trench fever patients as follows:

Group 1, feeding during the first and second days of the fever.

Group 2, feeding from the third to 6th days of the fever.

Group 3, feeding for the first week of the disease.

These three groups, as they were removed from the patient with trench fever, were placed on a volunteer. In one series of experiments they were all to remain on the volunteer until he contracted trench fever or for a period of thirty or more days. In a second series of experiments one half of them were to be removed from the volunteer after from forty-eight to sixty hours from the time they had bitten the original trench fever patients, and were then to be placed on a second volunteer to remain until he developed trench fever, or, if he did not develop trench fever, for thirty days. These two series of experiments have been performed in order to exclude purely direct mechanical transmission of the blood and organism by the louse.

In another series of experiments planned, the interval between the biting of the infected patient and the second volunteer has been extended to six days.[3]

In still another series of experiments comprising three volunteers, so-called "wild lice" were employed for infection; that is, lice taken from the clothing of trench fever patients. A fourth series of experiments is being performed to see if there is hereditary transmission of the virus of trench fever in the louse.

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[3] It was originally planned in case the louse was found to convey the infection to test its infectivity at intervals of forty-eight hours up to the limit of time of such infectivity.

In the majority of the experiments the lice have been placed in a covered cell made of calico, strapped on the arm with adhesive plaster. Into this cell is placed a small piece of flannel shirt. The cell measures inside from 3 to 4 inches long by about 2 inches wide. In it the lice live naturally, clinging to the fibrous cloth, and at other times wandering to the skin, feeding and depositing their excrement. They also breed and lay ova, some of the latter of which hatch in the cell. At intervals the cell was removed, the lice examined, and the patient, in some instances, was allowed to scratch the area if he so desired. In this way perhaps louse excrement sometimes entered slight abrasions caused by the scratching. Often a crushed louse was found in the cell, for the patient might scratch himself with the cell on his arm. In other words, if the individual contracted the disease in this manner from the louse it was evidently by a natural mode of infection. So far twelve of the individuals who have harbored the infected lice in this manner have contracted the disease. The time which elapsed from the date when the lice were first placed on these individuals to the date of the beginning of the disease has been: 1 case, 16 days; 1 case, 17 days; 2 cases, 19 days; 1 case, 20 days; 2 cases, 21 days; 1 case, 25 days; 3 cases, 26 days.[4]

The period from the time the lice were put on the patient to the date of the development of the disease, as would be expected, is somewhat longer than the incubation period in the majority of the cases in which the disease was produced by the injection of a large dose (10 c.c.) of the blood, though in two instances, as noted, the individual inoculated with whole blood did not develop the disease until about the twentieth day after inoculation.

The disease produced by inoculation of the blood or by the louse infection is apparently the same. In the four men, Nos. 23, 9, 28 and 52, who have developed the disease, it should be noted that the lice employed in infecting them were allowed to feed first on four trench fever patients. They were then after an interval placed on four different volunteers, Nos. 5, 39, 47 and 13, for approximately two days. One half of them were then removed from these men and placed on Nos. 23, 9, 28 and 52, who developed the disease after nineteen, twenty-six, twenty and twenty days, respectively. Apparently, therefore, the transmission of the disease by the louse is not necessarily direct and mechanical.

The cases of experimentally produced trench fever have been seen, and the diagnosis of the disease confirmed, not only by ourselves but also by the members of the Trench Fever Commission of the B. E. F., consisting of Sir William Leishman, chairman of the commission, Major-Gen. Sir Wilmot Herringham, Major-Gen. Sir John Rose Bradford, and Col. W. O. Beveridge, as well as by a number of other prominent clinicians.

Clinical laboratory serologic and bacteriologic examinations of blood, and of feces and urine of each patient employed and of each volunteer who has developed the disease, have also been made. The investigations and experiments have also demonstrated that trench fever is a specific disease and is not a form of typhoid fever.

They have also confirmed certain clinical knowledge of the disease. These and other points will be discussed fully in a complete report.

To summarize, it has been shown that the organism causing trench fever is present in the plasma of the blood and up to the present time it has not been shown to be filtrable (though in regard to the filtrability of the virus, sufficient time has not elapsed in the inoculated subjects for us to give a final decision). The disease is transmitted naturally by the louse *Pediculus corporis*, and apparently this is the important and common means of transmission. The experiments are still in progress and a report will be made later of further results.

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[4] Since this report was read, transmission of the infection by the louse has been demonstrated in two more cases with incubation periods of thirty and thirty-five days, respectively.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

ANTIPNEUMOCOCCUS SERUM.—A serum obtained from horses immunized by injection of virulent pneumococci. Each lot of antipneumococcic serum is submitted by the manufacturer to the U. S. Hygienic Laboratory for potency test before it is issued.

Actions and Uses.—The value in pneumonia of the serum properly prepared and administered seems to be established. Early massive (from 50 to 100 Cc.) intravenous doses of a highly potent serum, prepared from the type of pneumococcus present in the case to be treated are necessary. Investigations indicate that the pneumococcus in lobar pneumonia may be referred to one of four types in respect to its response to serum treatment (Dochez and Gillespie, THE JOURNAL A. M. A., Sept. 6, 1913, p. 727). The serum used should be obtained from an animal immunized with pneumococci of the type corresponding to that present in the special case under treatment. Thus far Type I serum alone seems to be on reasonably secure clinical ground.

Lederle Antitoxin Laboratories, New York (Schieffelin and Co., New York).

Antipneumococcus Serum, Type I.—Marketed in a pressure syringe containing 50 Cc.

Parke, Davis and Co., Detroit.

Antipneumococcic Serum, Type I.—Marketed in a piston syringe containing 50 Cc.

E. R. Squibb and Sons, New York.

Anti-Pneumococcic Serum, Type I.—Marketed in vials containing 50 Cc.

PHENYLCINCHONINIC ACID, U. S. P. (See N. N. R., 1918, p. 269).

Acid. Phenylcinch.-Morgenstern.—A brand of phenylcinchoninic acid, U. S. P.

Manufactured by Morgenstern & Co., New York. No U. S. patent or trademark.

Tablets Acid. Phenylcinch-Morgenstern.—Each tablet contains acid. phenylcinch-Morgenstern 0.5 Gm. (7.5 grains).

Sodium Phenylcinch. Water-Morgenstern.—A solution of sodium phenylcinchoninate containing sodium bicarbonate and sweetened with sugar, representing the equivalent of 1 Gm. (15 grains) acid. phenylcinch.-Morgenstern per fluidounce. It is prepared by dissolving acid. phenylcinch.-Morgenstern 15 Gm., sodium bicarbonate 11.7 Gm., sugar 90 Gm. in water enough to make 450 Cc.

PROCAINE. — $CH_2(C_6H_4.NH_2.COO).CH_2[N(C_2H_5)_2].HCl$. The monohydrochloride of para-aminobenzoyldiethyl-aminoethanol.

Action, Uses, Dosage, Physical and Chemical Properties.—See New and Nonofficial Remedies, 1918, p. 32.

Procaine-Rector.—A brand of procaine complying with the N. N. R. standards.

Manufactured by the Rector Chemical Company, Inc., New York, under U. S. patent No. 812,554 (Feb. 13, 1906; expires 1923) by license of the U. S. Federal Trade Commission.

BARIUM SULPHATE FOR ROENTGEN-RAY WORK (See N. N. R., 1918, p. 56).

Barium Sulphate-Brady for Roentgen-Ray Work.—A brand complying with the N. N. R. standards for barium sulphate for Roentgen-ray work.

Manufactured by Geo. W. Brady &. Co., Chicago.

Health and Taxes.—Provisions and expenditures which aid in the reduction of the things which sap the vitality of the nation will aid in preventing increased taxation for the support of the growing army of the unfit.—*Public Health* (Mich.).

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SATURDAY, JUNE 1, 1918

THE COST OF LIVING AND ADEQUATE NUTRITION

The problems of the standard of living have a bearing on the medical profession in more than one way. When the family income is reduced to a dangerously low level, the possibility of undernourishment is always present. The efficiency of the members is likely to be lowered, and sickness is almost certain to become prevalent. A vicious circle of successive misfortunes tends to become established. With the entrance of disease the already low earning capacities are impaired, so that the treatment of the afflicted must be provided and managed through public or private philanthropic agencies. The socialization of medicine makes an urgent appeal as the outcome of precisely such circumstances.

The cost of living has been discussed at times in these columns. A decade or two ago it seemed to be quite possible for an average family of five or more, living in an urban community, to maintain a fair standard of living, without incurring debt, on an income of $750 a year. Estimating an allowance of two fifths of the income for food — a liberal proportion from the economist's point of view—somewhat less than $6 a week would thus be provided to procure the minimum of wholesome food.[1] In other words, as a recent writer has expressed it, $750 was ten or fifteen years ago a large enough sum to provide a family of father, mother and from three to five young children with the necessities for the maintenance of a fair standard of living, provided the money was wisely expended. A study made some years ago in New York indicated the necessity for an allowance of at least 22 cents per person per day for food; but the studies of Stern and Spitz[2] in Boston after the outbreak of the European war disclosed that this sum was no longer adequate under the conditions of urban food prices.

Obviously the "living wage," the "standard of living" and the "working efficiency" of laboring classes, which comprise three quarters of the families in the United States, are closely interrelated. Never before has information bearing on these themes been more needed. All calculations based on conditions of a decade ago, or even those existing two years ago, leave us in the lurch. The purchasing power of money has become radically different. This may suffice to explain why so many sociological-physiologic studies in this field have been undertaken recently. One of the latest is concerned with the cost of living of working class families in Roxbury, Mass.,[3] as late as the spring of 1917 following the rise of prices during the winter of 1916-1917. Statistics actually collected led Stites to the conclusion that, without making allowance for the rise in prices of other items, and considering merely the necessity of spending more for a minimum ration, the smallest income on which a normal family could maintain a proper standard of living in a city like Boston was $850 a year — that is, reckoning fifty working weeks a year — $17 a week; and if the amount spent for food was to be a proper proportion of the total expenditures, the family income in the latter part of 1916 should have been at least $1,000. By the end of April, 1917, however, the simplest diet that would furnish adequate nourishment cost nearly $2.75 per unit per week. A family of father, mother and four small children should have spent for food at that date a sum that would amount to more than $568 a year. In order to have proper food and also to meet the other expenses of a normal existence, the family would have had to spend at least $1,100 a year. The weekly income, therefore, should have been about $22.

It is not likely that the majority of working class families are yet provided with resources of this magnitude, despite the great increase in wages in certain fields. For this reason it is interesting to learn what conditions of health and nourishment were actually observed in communities where the income was less than food prices seemed to demand. Estimation of the Roxbury budgets, says Stites, reveals the fact that at least eleven of the sixteen families were underfed. The amounts spent on food by these eleven households varied from a sum 40 per cent. short of an amount that would have purchased a living ration, to an amount only 2 per cent. short of that desirable minimum. Two families of this group spent less than two thirds of the amount that should have been at their command for food purchases, and four families had only about three quarters of the sum they needed. The average sum spent by these eleven families was about 20 per cent. less than it should have been. In not very vivid contrast to this state of affairs, the budgets of four other families show a slight excess of expenditure for food, an excess averaging about 6 per cent. more than the sum necessary to buy an adequate supply. One family out of the group of sixteen spent approximately the correct amount.

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[1] The Cost of Living and Retail Prices of Food, Eighteenth Annual Report, U. S. Commissioner of Labor, 1903. Chapin, R. C.: The Standard of Living in New York City, Charities Publication Committee, New York, 1909. Herzfeld, E. G.: Family Monographs: The History of Twenty-Four Families Living in the Middle West Side of New York City, New York, James Kempen Printing Company, 1905. More, L. B.: Wage Earners' Budgets, New York, Henry Holt & Co., 1907. Streight- [illegible] F. H.: The Standard of Living Among the Industrial People of [illegible]a, Boston, Houghton Mifflin Company, 1911.

[2] Stern, Frances, and Spitz, Gertrude T.: Food for the Worker, [illegible]

[3] Stites, Sara H.: A Study of the Cost of Living of Working Class Families in Roxbury, Mass., Jour. Home Economics, 1918, 10, 147.

It requires little speculation to reach the conclusion that when income is so restricted in relation to the cost of food, the other items in the budget, such as rent, fuel, clothing and insurance, must be limited. One feature of the Roxbury inquiry cannot fail to interest the medical reader:

> Expenditures for health were very small, and it was a matter of interest to observe that no money was wasted on patent medicines. Three families spent nothing at all for the maintenance of their health during the weeks of the investigation. Most of the families, however, spent an average of a few cents a week for drugs and for treatment. Several sent their children to the Forsythe Dental Infirmary and paid small sums for the services rendered them there. One or two others availed themselves of the opportunities offered by hospital dispensaries for treatment of chronic troubles, as in the case of a child who had suffered from infantile paralysis.

The problems of maintaining those who cannot economize more is on us in new relations. Our profession is bound to meet them; and it cannot avoid contributing its share in the solution of great sociological questions.

SODIUM VERSUS POTASSIUM

The European war has taught us many lessons. Among them is the realization that we had become so dependent on Germany for certain things as to take for granted that this dependence was a necessity. Before the war, nearly all the potash used in the United States was obtained from Germany, where there were large natural deposits and, particularly, in such a form as to make them readily usable. As a result, Germany easily developed a potassium industry far ahead of that of any other nation. When the embargo was declared on Germany, the price of potassium salts in this country began to soar. This rise in price was one of the early manifestations of our previous dependence on that country for some of our important chemicals. During these years of supremacy of German potash, large natural potassium compounds were available in the United States, but not in such a form as to be easily adaptable for technical use. Nor was their chemical refinement commercially feasible against the German prices. However, since the war, American chemists have been investigating our own resources of potassium. Now the industry is developing favorably, demonstrating again that we can become independent of Germany in those instances in which necessity dictates. It will be a long time, however, before the potassium industry will be sufficiently developed to supply the urgent needs of war-time work.

Meanwhile, when a much-needed substance becomes scarce, or conditions develop making it necessary to economize in the use of a substance, we look around to see what substitute, if any, is available. In this instance we do not have to look far. Chemists tell us that potassium and sodium are sufficiently similar to be used interchangeably, and the latter is readily available. Within its borders the United States has an abundant supply of sodium salts in wells and mines, as well as in the oceans, and in forms readily usable from the commercial and the technical standpoint.

Why, then, have potassium salts become so generally used to the exclusion of many of the sodium salts? The answer has been, "German propaganda." Be this as it may, an editorial writer in a recent issue of the *Chicago Chemical Bulletin*[1] also credits it to prejudice:

> The sodium salt should be superior to the potassium salt and yet because of the prejudice which extends throughout the chemical and medical fraternity, we continue to buy an inferior article at high prices and refuse to buy a superior article at a reasonable cost. Such is custom, tradition and prejudice among men—the chemist and medical doctor seem to be no exception in this regard.

Whatever the cause, we are so accustomed to using potassium rather than sodium salts that it has become a habit with us.

In addition to the chemical similarity of potassium and sodium, there is no preponderance of evidence to warrant us in believing that potassium salts as a therapeutic agent have any advantage over sodium salts.

Economically, the sodium salts now occupy a much more favorable position than the potassium salts; for instance, the current price of potassium acetate is $2 a pound, and of sodium acetate, $0.62; potassium bicarbonate, $1.28, and sodium bicarbonate, $0.05; potassium bromid, $1.93, and sodium bromid, less than half, $0.86 a pound; potassium chlorate, $0.86, and sodium chlorate, $0.57; potassium hydroxid, $3.50, and sodium hydroxid, $1; potassium iodid, $4.64, and sodium iodid, $5.15; potassium permanganate, $5.23, and sodium permanganate, $3.50.[2]

There are three reasons why sodium should be substituted for potassium: 1. By avoiding as much as possible the use of that which goes into ammunition or other war-time channels, especially if there is a scarcity, it will help win the war. 2. Therapeutically, the sodium salts are on the whole as good as potassium salts, and in some instances better. 3. Sodium salts are much cheaper than the corresponding potassium compounds. Physicians should acquire the habit of prescribing sodium compounds in preference to potassium compounds.

Dr. Robert [illegible]

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[1] Sodium and Potassium, Chicago Chem. Bull., May, 1918, p. 94

[2] Sodium chlorate and sodium permanganate are not offici have not been standardized. As potassium permanganate is larg for fumigation with formaldehyd, it can be replaced by other reage The higher price of sodium iodid is attributable to the fact that it has not been widely used. No doubt as soon as the demand has increased, sodium iodid will decline in price below potassium iodid.

In connection with the foregoing, it is gratifying to note that the Army has recently awarded a contract for 40,000 pounds of sodium permanganate, totaling $100,000. At previous times the Army has purchased potassium permanganate, simply, we presume, because sodium permanganate was not entered in the supply lists; this one order of sodium permanganate, thereby breaking away from the potassium habit, should save the government about $100,000.

SOME LESSONS FROM TRENCH JAUNDICE

Among numerous lessons that the war has taught the medical profession, the importance of a proper recognition of certain forms of infectious jaundice must be included. Sufficient information is now available to make it seem unjustifiable for a careful clinician to utter an offhand diagnosis of ordinary catarrhal jaundice on the basis of simple icteric symptoms unattended by pain; for trench jaundice, as it occurs among the fighting forces, has directed attention anew to the widespread prevalence of an acute infectious disease characterized by malaise, prostration, and gastro-intestinal symptoms at onset, by fever of varying degree, and by jaundice of varying intensity and duration. In severe cases, bleeding from mucous surfaces and albuminuria are common. In moderately severe cases the rather high fever, marked prostration, and absence of local signs tend to exclude local disease of the biliary tract and present the clinical picture of an acute infection. It is stated,[1] however, that light cases of this affection seem to be clinically indistinguishable from ordinary catarrhal jaundice and therefore are seldom diagnosed correctly in the absence of an outbreak of the disease, which naturally directs attention to the probably infectious character of the malady.

Since 1916, it has become increasingly more probable that acute infectious jaundice is not merely the accompaniment of some long known infection, but is due to a definite micro-organism, the *Spirochaeta icterohaemorrhagiae*. It is assuredly not an entirely new disease; for, long before the present war, acute infectious jaundice was recognized as occurring especially among troops, sewer workers, agricultural laborers working in wet soil, and in mine workers. Neill,[1] of the United States Public Health Service, has collected evidence to indicate that something comparable to what we are discussing occurred among troops in the War of 1812; even more probable are the indications of the outbreaks of a similar malady in our Civil War. Among the civil population of the United States, epidemics of jaundice closely resembling those now believed to be caused by the spirochete have occasionally appeared.

From the standpoint of an understanding of the etiology and preventive measures, the discovery of the same spirochete in wild rats at various places has been of the utmost importance.[2] The organism has been found in rats taken from the trenches where the disease had appeared among the troops, and likewise in rats captured in such widely separated localities as Washington, Nashville and New York. Noguchi has thus presented the situation:

> The finding of the causative organism of infectious jaundice among wild rats in America, and the identification of this strain with those found in Asia and Europe, seem to be particularly important in revealing a latent danger to which we have been constantly exposed, but from which we escape as long as sanitary conditions are not disturbed by untoward events.

The mode of infection is still largely problematic. One can scarcely assume that rat-bites could account for all of the numerous cases. Such observations as have already been made indicate that about 10 per cent. of all wild rats wherever located probably carry the *Spirochaeta icterohaemorrhagiae* in their kidneys and excrete them in the urine. Hence Neill[1] ventures the hypothesis that if this organism finds a favorable environment in the soil, a sufficient number may live long enough to infect a human being who gets them in the mouth or on the skin. Under these conditions a larger number of rats also take up the spirochetes. In any event, every practitioner may proceed forewarned and prepared to recognize Weil's disease, which now is entitled to the more formidable designation of spirochetosis icterohemorrhagica.

THE ROCKEFELLER FOUNDATION AND ITS MEDICAL PROJECTS

Although the Rockefeller Foundation is at present devoting by far the larger part of its available resources to the support of war work, its projects have so largely acquired medical or hygienic interest that a mention of them seems desirable. They may be classified in general as dealing with medical education on the one hand and public health problems on the other. The educational projects along medical lines are too numerous to permit detailed mention here. The establishment of medical schools and hospitals in China, the organization of a school of hygiene at Johns Hopkins University for the training of sanitarians, and the investigation of medical education and public health activities in South American countries are some of the features of work in progress.

Among the diseases, hookworm infection, malaria, yellow fever and tuberculosis have received attention from some directions. Thus last July the foundation, through the International Health Board, appointed Dr. Livingston Farrand, president of the University of Colorado, director of a commission which went abroad to undertake the task of setting up in France, in close cooperation with the French government and the medical profession, a dispensary, publicity and training demonstration which should aim at helping to control tuberculosis. The work of the International Health Board in its warfare against hookworm disease has been referred to from time to time in THE JOURNAL.[1] Efforts directed to the control of the disease were extended during the year 1917 to three of the states in Brazil, to Siam, the Fiji Islands, the Seychelles Islands, and to four additional states of the Union — Alabama, Arkansas, Georgia and Maryland.[2] In one island, Antigua, the work that had been undertaken was completed. The board was at work during the year in thirty-seven areas, which included twenty-five foreign countries and twelve American states.

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[1] Neill, M. H.: The Problem of Acute Infectious Jaundice in the United States, Pub. Health Rep., 1918, **33**, 717.

[2] Noguchi, Hideyo: Spirochaeta Icterohaemorrhagiae *in* American Wild Rats, and Its Relation to Japanese and European Strains, Jour. Exper. Med., 1917, **25**, 755. Jobling, J. W., and Eggstein, A. A.: The Wild Rats of the Southern States as Carriers of Spirochaeta Icterohaemorrhagiae, The Journal A. M. A., Nov. 24, 1917, p. 1787. Neill (Note 1)

Recognizing clearly that malaria is a community problem rather than an affair of individuals, the International Health Board of the foundation has furnished demonstrations of the possibility of mosquito control. The Arkansas demonstrations are now reported as completed. At Crossett, Ark., the drainage problem was neither difficult nor expensive. The attack was therefore centered on exterminating the mosquito. The effect of this was striking. The numbers of doctors' calls for malaria fell from 600 in October, 1915, to forty-six a year later and to fourteen in October, 1917. The per capita cost for the first year was $1.24. This included a considerable amount for capital expenditure in ditching and draining. During the second year (1917) the maintenance cost fell to a much lower figure. Crossett has now assumed full control of its malaria work. At Hamburg, Ark., after a year of successful demonstration, the entire expense of maintenance is being met by the community. The principle of teaching others to help themselves cannot but be commended as sound.

The campaign, projected some time ago for 1917, to rid the world of yellow fever, has been retarded by the war. It is believed that the seed-beds of the disease have been found on the west coast of South America, in a region along the south shores of the Caribbean Sea, in a strip along the north Brazilian coast, and in a certain area on the west coast of Africa. Despite the interruptions to the plans, scouting parties are on guard. The foundation's authorities believe that the real fight against yellow fever will come when the war is over; yet it is hoped wholly to exterminate the disease from the world.

An experiment that will be watched with interest is involved in the cruises of a hospital and dispensary ship carrying medical relief to the southern islands of the Philippine group. If these peaceful visits to remote places are successful, they will serve to demonstrate that for purposes of placating primitive and suspicious peoples, medicine has some advantages over machine guns. This mode of dealing with a backward people has further general significance, to quote President Vincent, for the development of a system of mobile dispensaries operating from a base hospital. The principle may find expression equally well in a motor-car dispensary, with physician and nurse, operating through a rural area from a general hospital in an American county.

The war service rendered with the aid of the foundation's funds through the Rockefeller Institute for Medical Research are better known. To its war demonstration hospital, to the institute laboratories and to the institute hospital, medical officers of the Army and Navy are being officially sent for study and experience. To this may be added the plans to facilitate, under the direction of Major Thomas W. Salmon, the treatment of "shell shock" — the term for "that wide range of cases from true paralysis to simple cowardice." Mental diseases, subject to the investigations of the National Committee for Mental Hygiene, are not overlooked by the foundation's resources. The after-care of the victims of infantile paralysis has likewise been the recipient of aid. The many normal activities of the Rockefeller Foundation, President Vincent remarks, are not isolated items, each independent of the others; they all fall into a world-wide organization in the interests of scientific knowledge applied to human welfare.

BENEFICENT STREPTOCOCCI

The mention of the term *Streptococcus* is more than likely to bring disagreeable sensations and unpleasant recollections to the minds of those who hear it. Thoughts of abscesses and suppurative processes, of inflammation and other pathologic reactions will arise in those for whom the word has any significance at all. From the standpoint of mere terminology this should not happen; for *Streptococcus* is merely the designation of a type of micro-organisms, of cells that divide in one plane so as to form short or long chains. However, association often determines the habits of mind as well as of body. The streptococci have so long been associated with disease that even the bacteriologist will inevitably tend to retain this relationship uppermost in his mental reactions. The condemnation of this group of bacteria is not of recent origin; for the attempts to produce powerful immune serums against streptococci date back to the earliest days of immunology. The differentiation of the types, the recognition of the peculiar pathogenicity of *S. viridans, S. hemolyticus* and others, and the appreciation of their baneful elective localization have not served to lessen the dislike of these enemies of mankind and the animal races.

There are instances in which the presence of streptococci does not lead to quite such severe indictments.

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[1] Problems in the Campaign Against the Hookworm, editorial, THE JOURNAL A. M. A., Nov. 10, 1917, p. 1611; Hookworm in the Mines of China, Nov. 17 1917, p. 1701; Hookworm Infection in Deep Gold Mines in California, Dec. 22, 1917, p. 2116.

[2] These and other facts here cited are taken from Vincent, G. E.: The Rockefeller Foundation, Review of Work in 1917, New York, 1918.

In addition to the distinctly pathogenic groups that differ among themselves in virulence there are streptococci which are common in the udder, in the saliva, and in the intestine. They are generally believed to be devoid of real virulence; but the garget, mammitis, or mastitis related to the udder of cattle, their hoof rot and navel ill cannot be mentioned without casting additional suspicion on chain bacteria. Lately the designation *Streptococcus lacticus* has been assigned to milk-souring organisms once dignified with the name *Bacterium lactis-acidi.* Whether they win approval or condemnation depends on one's attitude toward their performance. Sour milk may be a desideratum in many instances; in still others it gives the impression of undesirable spoiling.

A government dairy bacteriologist in the Bureau of Animal Industry[1] has presented streptococci in an entirely different rôle, namely, as producers of flavor substances and other ripening changes in food prepared for consumption by fermentation, and particularly in the ripening of cheese. In this connection, says Evans,[1] the streptococci are important as one of the factors concerned in rendering palatable many articles of food in use throughout the world. But they are unobtrusive and demand little attention—only that the proper conditions for their growth shall be provided. The manufacturer of the food meets this demand without knowing why; he knows simply that if he follows such and such a procedure he will obtain the desired results. Therefore the flavor-producing streptococci have escaped notice.

Evans has found that streptococci differing from the more familiar *Streptococcus lacticus* are common in ripening cheese of various kinds and in other foods, such as kefir, the mash from which the Japanese condiment "soya" is prepared, and the Chinese "toku," or soy bean cheese. All of these represent products of fermentation of some sort. Evans believes that a study of the mouth, fecal and udder types of streptococci will show that cheese streptococci belong to those familiar types. Some conception of what such organisms can accomplish is summarized in Evans' report: A cream cheese inoculated with *S. lacticus* alone has its own peculiar flavor; a cream cheese inoculated with *S. lacticus* and *Streptococcus x* has a decidedly different flavor; one inoculated with *S. lacticus* and *S. kefir* has another flavor; and when all three species of streptococci are used together, still another flavor is produced. As some people prefer their ice cream flavored with vanilla, and others like chocolate flavoring best, so the one cheese flavor is more pleasing to some people, while others prefer another. It is gratifying to know that the highly variable demands of a discriminating public can be met in some respects by the employment of suitable streptococci in a beneficent rather than a baneful way.

Current Comment

A MEDICAL ROLL OF HONOR

The survey of the war service of the medical profession, including the fundamental data relative to the supply of physicians in proportion to the population, appears in this issue of The Journal. As stated in the introduction to the survey, its compilation has been most difficult and time-consuming. Yet we believe that its importance more than justifies the work, time and expense involved in its preparation and publication. Undoubtedly it will be of great interest to every physician in the country; it will surely be of practical value to those who are directly concerned with the problem of supplying the Medical Department of the Army and Navy with a sufficient number of medical officers. While the tabular matter constitutes a survey, the list of names is, as stated, a real Honor Roll. It represents men who have made sacrifices for their country — men who have not only left the comforts of their homes, but also have given up professional work which in a majority of instances yielded far more income than the pay which they will receive as medical officers, even though they attain the highest possible rank. Among them are many of the most prominent physicians in our profession, including noted specialists, as well as surgeons and internists. This Honor Roll shows that the medical men of this country are not slackers. While the tabular matter indicates that there are only 19,692 medical officers, this does not represent the total number of physicians in military service. Including the Medical Corps and Medical Reserve Corps of the Army, the Medical Corps of the National Guard now in the Federal service, the Medical Corps of the National Army, the Medical Corps and the Medical Reserve Corps of the Navy, there are a total of 23,196 physicians actually commissioned, and practically all on active duty. Let it be remembered also that there are some 25,000 physicians engaged in the work of the local, district and advisory boards. As The Journal has stated repeatedly, the medical profession may be relied on to respond to any call the country may make on it.

LEST YOU FORGET

The authorized strength of the Regular Medical Corps of the Army is 2,975. The total present strength, i. e., on May 24, is 868. This indicates a splendid opening for over 2,000 ambitious medical men under 32 years of age.

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[1] Evans, Alice C.: A Study of the Streptococci Concerned in Cheese Ripening, Jour. Agricultural Research, 1918, 13, 235.

KEEP UP YOUR OWN HONOR ROLL

Undoubtedly many of our readers would like to keep up to date a record of those—especially in their own county or state—who are giving their services to the government. This they will be able to do with little effort. Commencing this week, THE JOURNAL will publish a list, grouped by states, of those who, from this time on, accept commissions, with rank. It will be a comparatively simple matter, week by week, to copy the names into the Honor Roll as it appears in this issue of THE JOURNAL. It will take only a few minutes' time, and the satisfaction of having a complete list will be sufficient to pay for the slight effort. As noted in the introductory matter to the survey, there will be prepared for the county society and for the state association officials a list of registered physicians within the respective jurisdiction—that is, for the county or the territory covered by the component county society, and also for the state as a whole. On this list will be indicated (*a*) those who are commissioned; (*b*) those whose applications are pending, and (*c*) those who have been honorably discharged. These lists will be compiled as rapidly as possible; but not till after the meeting of the Association next month.

A MEDIEVAL PANACEA

At a period like that of the present when well-defined specialism has become an established fact in medicine and is accepted by the dependent laity as an inevitable, if not indispensable, feature of practice, the word "panacea" awakens a sequence of soothing reflections. Even the placebo is nowadays specialized for each suitable case. Little wonder that Asclepiades was looked on by the Romans as "a person sent from heaven" because the measures of treatment that this popular physician prescribed were agreeable and could at the same time easily be employed by almost any one. How can we of the twentieth century, accustomed to a multiplicity of difficult and sometimes dangerous therapeutic methods, appreciate the comfort of a medieval panacea, that which Bacon defined as a medicine by which life is protracted to its utmost natural limits, since it expels infirmity, reduces evil complexions to a good condition, and cures all diseases? Such a one Steele[1] has recently extracted, in new translation, from the Secretum Secretorum supposed to have been written by Aristotle for Alexander. The medium—a preliminary part of the prescription—consists of the juice of sweet pomegranates, apples, sugar and grape juice, mixed with that of sour pomegranates, quinces or apples, and boiled down to the consistency of honey. In the first medicine, for strengthening the brain, heart and stomach, a decoction of roses and violets was made; to this parsley water, sweet marjoram and bugloss extract were added. After further addition of myrobalans and cloves, and after standing twenty-four hours, the mixture was reduced to one third by heat. The product was completed when it was incorporated with the basal honey-like medium along with musk, ambergris and aloes. Seven equally complex concoctions are described for fortifying the stomach, strengthening the viscera, tempering the stomach to expel melancholy, or to correct the liver. The final mixture of all in one, along with fresh tamarind pulp, oil of balsam and other rare products is then subjected to what Steele has happily designated "a grand orgy of expense" in the preparation of the supreme panacea. Powdered pearls, rubies, sapphires and amethysts, emerald dust and lastly finely divided gold are incorporated in the electuary in a gold pot, incensed with aloes. The product is then exposed to the influence of the heavens for eight days, "being carefully guarded from exposure to the moon in her malignant aspects." The dose is 1 dram fasting and 1 dram after meat. Humorous, do we say? Perhaps some of our present day nostrums or even prescriptions will likewise be quoted a few centuries hence as instances of the perpetuation of quackery in all ages.

THE LITCHI NUT AS FOOD

Although the edible litchi or so-called Chinese hazelnut, *Litchi chinensis,* is by no means unknown in this country, it has never attained sufficient prominence to deserve a place out of the class of dietary novelties. Most nuts that have obtained popularity as food products in the United States are rich in protein and fat. The chestnut alone is conspicuous for its richness in starch and its freedom from oil. According to the latest experiments of Read[1] at Yale University, the litchi likewise is practically fat free and contains little, if any, protein. From the nutritive standpoint the litchi was shown to deserve consideration because of its content of carbohydrate which is a mixture of simple sugars, principally invert sugar, such as is found in honey. An added flavor is due to the presence of citric acid, with possible traces of other common fruit acids which, as Read remarks, stimulate the appetite and are prized as "thirst relieving" substances. The possibilities in the way of suitable fruits and nuts, both of which the litchi resembles in some respects, are not so varied that an added one is not worthy of respectful consideration.

LARGE CITIES DELINQUENT

An analysis of our survey, or Honor Roll as we prefer to call it, will show that the large cities have furnished the smaller percentages of physicians to the Army and the Navy medical services. Yet it is these centers of population in which fewer physicians are needed in proportion to the population. Because of accessibility, one physician can care for two or three times as many patients as can be served in rural communities. Again, availability of hospital facilities, and the fact that the public is more and more inclined to go to hospitals, tend to economy of the physician's time. Our greatest efforts to secure volunteers for the Medical Reserve Corps must be made in the cities.

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[1] Steele, R.: A Mediaeval Panacea, Proc. Roy. Soc. Med., Section of the History of Medicine, 1917, **10,** 93.

[1] Read, B. E.: The Edible Litchi Nut (Litchi Chinensis), Jour. Am. Chem. Soc., 1918, **40,** 817.

Association News

THE CHICAGO SESSION

SELECTIVE SERVICE REGULATIONS AND STANDARDS OF PHYSICAL EXAMINATION

Discussion by Persons Connected with and Interested in the Selective Draft

At the Chicago session, there will be a discussion on the Selective Service Regulations and on the "Standards of Physical Examination" by persons connected with and interested in the selective draft. Meetings for this purpose will be held at the Studebaker Theater, Thursday, June 13, at 2 p. m., and Friday, June 14, at 10 a. m.

THURSDAY MEETING, 2 P. M.

Medical Aspects of the Selective Service:

Discussion opened by:

Major Hubert Work, presiding, from the Provost Marshal-General's Office.

Col. Frank Billings, from the Surgeon-General's Office.

Mr. Graham Taylor, Illinois, representing Local Boards.

Col. James Phalen, representing the cantonments.

Dr. James B. Herrick, Chicago, representing the District Boards of Appeal.

Lieut.-Col. J. S. Easby-Smith, Washington, D. C., representing Provost Marshal-General Crowder.

Voluntary five-minute addresses and inquiries will be invited. Reply to inquiries will be made by Lieutenant-Colonel Easby-Smith.

FRIDAY MEETING

8:30 a. m.—Conference: Lieut.-Col. J. S. Easby-Smith and Major Hubert Work, with medical aides to the governors.

10 a. m.—Joint Session of medical aides, medical members of Local, District and Medical Advisory Boards, and dentists. Information discussion of the Selective Service Regulations with the representatives of the Provost Marshal-General's Office.

The "Standards of Physical Examination" will be available for discussion.

CONFERENCE OF MEDICAL SCHOOLS

A conference of medical schools, under the auspices of the Council on Medical Education of the American Medical Association, will be held at the Gold Room of the Congress Hotel, Tuesday, June 11. The sessions are to begin at 9 a. m. and 2 p. m. The conference will consider war problems in medical schools. The opening address will be given by Col. William H. Welch, who will act as chairman of the conference.

The program is as follows:

Committee on Education and Special Training, General Staff of the Army:
- Lieut.-Col. Robert I. Rees, Military Aspects of Training.
- Dr. Charles R. Mann, Educational Considerations.

Medical Department of Army:
- Lieut.-Col. Horace D. Arnold, Medical Schools.
- Col. V. C. Vaughan, Medical Teachers.

Bureau of Medicine and Surgery, U. S. Navy:
- Admiral E. R. Stitt, Medical Inspector, U. S. Navy.

Medical Schools:
- President Ray Lyman Wilbur; Deans Samuel W. Lambert, J. Whitridge Williams, John M. Dodson and William S. Carter.

Council on Medical Education of the American Medical Association:
- Dr. N. P. Colwell.

Council on Medical Education, American Institute of Homeopathy:
- Dr. George Royal.

State Licensing Boards:
- Dr. Walter L. Bierring; Mr. Augustus S. Downing, and Dr. John M. Baldy.

GUESTS AT THE ANNUAL SESSION

The annual session of 1918 will be conspicuous for the distinguished guests who will honor the Association by their attendance. This session is distinctly a war session. The military medical department of our government will be represented by numerous officers, including the Surgeon-Generals of the various services. From London will come Sir Arbuthnot Lane and Sir James Mackenzie, perhaps as noted a surgeon and an internist as could be selected from among the British profession; the Canadian army will be represented by Col. Herbert Bruce. Dr. René Sand has been delegated by the Belgian general consul to represent that government. M. Justin Godart, for three years undersecretary of state for the military medical service of France, with Major E. Rist and Major Edmond Locard, will represent the French medical service. There will also probably be a representative from Australia and one from Italy; these names, however, are not yet available. Representative of the Red Cross will be Mr. J. J. O'Connor, director. The liaison officers from the Surgeon-General's Office. Col. Claude K. Morgan, C. M. G., R. A. M. C., of the British government, and Col. Charles Dercle of the French Army Medical Corps will also be present. The program of the Section on Diseases of Children includes Dr. Paul Armand de Lille of France and Dr. Truby King of New Zealand. This session will have an international character, serving to bind together more closely the bonds which are daily becoming stronger between our government and its allies.

GENERAL MEETINGS

One of the usual features of the annual session of the American Medical Association has been the President's Reception and Ball. Because such a feature would not be in accord with the times, it will be omitted this year, as it was last. However, there will be three general meetings.

Opening General Meeting

The Opening General Meeting will be held at the Auditorium Theater, Tuesday evening, June 11, at 8:15. In addition to the usual opening program, including the President's address, there will be a patriotic address by the Hon. Frank O. Lowden, Governor of Illinois. At this meeting, foreign guests will be introduced.

The War Meeting

The second general meeting will be held at the Medinah Temple, Ohio and Cass streets, at 8:15 Wednesday evening. The program for this meeting will consist of patriotic singing, and short addresses by some of the foreign guests, including those from Belgium, France, Great Britain, Canada and Australia, and, it is hoped, from Italy; by representatives of the Red Cross, of the Army and of the Navy, who have been on foreign duty, by Major-General Gorgas and by Admiral Braisted.

The Patriotic Meeting

The popular Patriotic Meeting will be held on Thursday evening at 8:15 in the Auditorium Theater. As already announced, the principal addresses will be those of Prof. John M. Coulter, on "Science and the War," of Judge Charles S. Cutting on "The Law and the War," and of Bishop C. P. Anderson on "American Ideals." The Great Lakes Training Station Band will be one of the features of this meeting. There will also be choral and other singing.

CLINICS AT THE CHICAGO SESSION

The local committee of arrangements, through its subcommittee on clinics, has provided a very complete and comprehensive schedule of clinics covering the five day period, June 6 to 11, inclusive.

No clinics will be scheduled after Tuesday, June 11; hence there will be no conflict with the regular programs of the Scientific Sections of the American Medical Association.

The preliminary announcement made in The Journal, May 11, has been added to materially, and details of all clinics will be printed and ready for distribution to those who attend. Over four hundred clinicians will participate, and the average number of clinics will exceed one hundred for each day. The list of clinicians and the hospitals in which they work, together with the hours of their clinics, has been completed and will be mailed to any physician on request. The final details of the cases are the only feature remaining to be completed; naturally there will be minor variations up to the hour of the clinics.

The committee has information as to the capacity of each amphitheater, and if the attendance demands it, admission will be by ticket, in order that no clinic may be overcrowded.

The headquarters of the clinic committee will remain at the office of the Chicago Medical Society, 25 East Washington Street, until Thursday, June 6, when the headquarters will be moved into the Sherman House and all information and tickets will be given out from there.

The schedules in the hands of the committee show that practically every specialty will be represented every day throughout the entire period.

The committee desired to repeat that there is no charge to Fellows of the American Medical Association for the privilege of attending these clinics.

Charles E. Humiston, Chairman.

Medical Mobilization and the War

Personnel of the Medical Department

For the week ending May 24, 1918, the personnel of the Medical Department of the Army included:

Medical Corps: 868, including 1 major-general, 65 colonels, 110 lieutenant-colonels, 298 majors and 394 lieutenants.

Medical Reserve Corps: 19,092, including 1,366 majors, 4,921 captains and 12,805 lieutenants. On active duty: 17,103, including 1,278 majors, 4,630 captains and 11,195 lieutenants.

Medical Corps, National Guard: 1,201, including 19 lieutenant-colonels, 244 majors, 153 captains and 785 lieutenants.

Medical Corps, National Army: 141, including 2 brigadier-generals, 16 colonels, 115 lieutenant-colonels and 8 majors.

The discharges to date are:

Causes	Number	
	M.R.C.	M.C.N.G.
Physical disability	664	52
Inaptitude	257	20
Other branches of the service	507	71
Resignations	119	33
Domestic troubles	59	0
Needed by community	50	0
Deaths	75	5
Dismissals	9	2
Duty completed	1	0
No reasons given	14	0
	1,755	183

To Be Brigadier-General Robert E. Noble, M. C.

On May 20 the Senate confirmed the nomination of Robert E. Noble, M. C., U. S. Army, as brigadier-general in the National Army. General Noble was born in Georgia. He graduated from the Alabama Polytechnic Institute in 1891, received his medical degree from Columbia University in 1899, and was an honor graduate of the Army Medical School in 1904. He served three years in the Philippine Islands, and for seven years was in the Canal Zone. He accompanied General Gorgas on a sanitary mission to South Africa and also renderd valuable service at Vera Cruz in 1914. When the United States entered the war he was a major in the Medical Corps and took charge of the organization and assignment of medical officers. He has also acted as director of hospitals.

Divinity and Medical Students Must Register

According to a statement by Provost-Marshal General Crowder, all medical and divinity students reaching the age of 21 on or before June 5, must register on that date along with all other young men born between June 6, 1896, and June 5, 1897. The exceptions to this rule are officers and enlisted men of the Regular Army, Navy, and Marine Corps, medical officers of the National Guard and Naval Militia, while in Federal service, members of the Officers Reserve Corps and enlisted men in the Enlisted Reserve Corps while on active duty. According to a law signed by the President on May 20, 1918, all students who were preparing for the ministry in recognized theological or divinity schools and those preparing for the practice of medicine and surgery in recognized medical schools on that date are exempt from the draft. However, they must first register in order to be exempted.

Special Board to Investigate Pneumonia

A board of medical officers, consisting of Cols. Deane C. Howard, M. C., U. S. Army; Frederick F. Russell, M. C., U. S. Army; Victor C. Vaughan, M. C., N. A.; Lieut.-Col. William H. Welch, M. C., N. A., and Contract Surg. Rufus Cole, has been appointed for the purpose of making an investigation as to the nature, causes and prevention and treatment of pneumonia, and its complications, in the various military camps in the United States. It will report from time to time to the Surgeon-General of the Army, to whom a full report will be made as soon as practicable after the completion of the investigation.

Decorated for Bravery

On May 28, it was announced that the British Military Cross for bravery had been awarded to the following officers of the Medical Reserve Corps attached to British units in France: Capt. Thomas Edward Walker, Cleveland, and Lieuts. Lynwood M. Gable, New York City; Abraham I. Haskell, Minneapolis; James B. Clinton, Philadelphia; Samuel Adams, Jersey City, N. J.; Gouverneur H. Boyer, Pottsville, Pa.; Harold E. Foster, Castile, N. Y.; John B. Gregg, Iowa City, Iowa; Albert L. Jones, Weatherford, Texas; Baldwin L. Keyes, Philadelphia; Guy D. Tibbetts, Bennington, N. H., and Harvey C. Updegrove, Easton, Pa.

INSTRUCTIONS TO MEDICAL COLLEGES

A circular letter to medical colleges issued from the Surgeon-General's Office, dated May 24, 1918, gives instructions to medical colleges as follows:

Continuous Sessions.—The circular letter urges all medical schools that can do so to hold summer sessions for the next senior class—the class of 1919—so as to enable those students to complete their course in the medical schools three or four months earlier. Medical schools which are able to establish the continuous session for the other three classes and at the same time maintain the efficiency of instruction are invited to do so. The immediate adoption of the plan, however, is left to the judgment of the individual schools.

In arranging for continuous sessions, the plan of four terms of twelve weeks each during the calendar year is favored, but the plan of three terms of sixteen weeks each is acceptable. One week in each term is allowed for examination, and the time specified means actual teaching exclusive of vacations. The college year under the "quarter" plan would thus consist of three quarters, including thirty-three weeks of actual instruction, and under the three term plan, two terms including thirty weeks of actual instruction.

Matriculation for Next Session.—A circular letter issued by the Surgeon-General's Office authorizes "well recognized" medical schools to begin matriculation of the freshman class of 1918-1919 at once, whether the next session begins this summer or in the fall. A bona fide matriculation will be accepted as establishing membership in the class, as affecting eligibility for enlistment in the Medical Enlisted Reserve Corps.

Medical Faculties.—It is planned to maintain efficient and adequate teaching forces in "well recognized" medical schools, and deans of medical schools have been asked to submit lists of essential teachers for the coming year as a basis for the selection of those who should remain as medical teachers for that period unless an extreme emergency should arise. The Surgeon-General is definitely of the opinion that a teacher of students in the Medical Enlisted Reserve Corps may render as valuable service as those on duty with the active military forces. The appropriate recognition of such services in a military way is now being given serious consideration.

Other Problems.—Other problems of medical schools will be considered at the conference to be held in Chicago, June 11, the program of which appears elsewhere in this issue of The Journal.

INTERALLIED SCIENTIFIC FOOD COMMISSION

The first meeting of this committee was held at Paris in March, and the second meeting opened, April 30, at Rome. France is represented by Prof. E. Gley, C. Langlois and J. Alquier; Great Britain by E. H. Starling; the United States by Profs. R. H. Chittenden and Graham Lusk, and Italy by Profs. F. Bottazzi and L. Pagliani. There are also delegates from the farmers, economists, statisticians, etc., of the different allied countries. The food commissioner for Italy, Senator Crespi, presided at the conference. It is planned to have a secretary representing the commission in each of the allied countries, with a central office and secretary general at Paris. In France, Wednesday, Thursday and Friday are now meatless days, except that horse meat can be sold in shops selling horse meat alone. The slaughterhouses are to be closed from Monday evening to Friday morning, and the total animals slaughtered is restricted to two-thirds of the average number in March. Similar restrictions are to be enforced in Italy, except that mutton and goat's flesh can be sold and served on Wednesdays, and there is no restriction in the sale of pig products. Three days in the week are poultryless days.

REMEDYING THE REMEDIABLE DEFECTS OF REGISTRANTS IN GROUP B—THE REMEDIABLE GROUP

From: Office of the Provost Marshal-General.
To: Draft Executives in all States.
Subject: Registrants in the Deferred Remediable Group.

1. This is to advise the Executives of the Selective Service of the increasing number of registrants anxious to enter the Army, but who have been placed in Group B (the deferred remediable group) because of physical defects which disqualify them for general military service, but which in the opinion of the Medical Examiners may be remedied by appropriate treatment, or surgical operations, not in themselves involving risk to life.

2. Requests from hospitals are also reaching this office, offering to care for registrants under treatment preparatory to their induction into service. Physicians and surgeons stand ready to cooperate with hospitals in this service.

3. Maryland through its Governor, his Adjutant-General, and Medical Aide cooperating, have already on their own motion inaugurated this patriotic cooperation, for which all parties to it volunteer. Eighty registrants from Group B (the deferred remediable group) are on the waiting list in Maryland, and it is believed that Group B registrants, in that state, will very soon be transferred to Group A.

4. No responsibility is of course assumed, either by the Government, the state, or by those called upon to perform these gratuitous services, it is to be regarded only as a patriotic commendatory measure to strengthen our soldiery.

5. You are, therefore, requested to aid, through the usual channels, in bringing to the attention of registrants the facilities available for remedying minor physical defects which, when cured, will remove the registrant from the deferred remediable group and fit him for immediate training as a soldier.

E. H. Crowder, Provost Marshal-General.
By Hubert Work, Major, M. R. C.

[Note.—There might be added to the above circular a paragraph calling the attention of physicians to this opportunity for patriotic service. During the last two or three months it has become obvious that a decided change has taken place in the attitude of registrants toward military service. Many are today anxious to get into service who previously were seeking cause for exemption; consequently many registrants placed in Group B of Class 1 for some slight physical defect, such as hernia, hemorrhoids, missing teeth, minor foot defects, or chronic appendicitis, are trying to have the defects remedied and to get into the service.—Ed.]

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending May 17, 1918

1. ANNUAL ADMISSION RATE PER 1,000 (disease only):

All Troops	1,106.2
Divisional Camps	736.
Cantonments	1,227.2
Departmental and Other Troops	1,177.3

2. NONEFFECTIVE RATE PER 1,000 ON DAY OF REPORT:

All Troops	39.5
Divisional Camps	33.
Cantonments	44.7
Departmental and Other Troops	38.4

3. ANNUAL DEATH RATE PER 1,000 (disease only):

All Troops	6.3
Divisional Camps	3.1
Cantonments	9.9
Departmental and Other Troops	4.2

Note: On account of frequent changes in organizations and personnel, it is no longer practicable to group troops separately as National Army, National Guard and Regular Army as has been done previously in this report. The new grouping is considered more accurate.

NEW CASES OF SPECIAL DISEASES REPORTED DURING THE WEEK ENDING MAY 17, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal		Measles	Meningitis	Scarlet Fever	Deaths	Annual Admission Rate per 1,000 (Disease Only)	Noneffective per 1,000
				Total	New Infections						
Beauregard	8	..	19	40	4	2	..	..	5	1;084.1	53.5
Bowie	3	..	4	80	74	...	..	..	0	870.9	31.1
Cody	10	1	..	5	2	...	..	..	3	432.3	22.7
Doniphan	1	..	..	10	0	1	..	..	1	2,156.2	68.6
Fremont	3	..	..	46	45	28	..	1	1	1,209.2	38.5
Greene	...	..	..	6	6	3	..	..	1	540.1	23.4
Hancock	...	..	..	...	...	...	..	..	..	......	....
Kearny	3	..	2	6	0	3	..	1	5	855.1	33.1
Logan	3	3	2	40	21	1	2	1	0	514.9	29.7
MacArthur	...	..	..	...	...	...	..	..	1	749.5	47.3
McClellan	...	..	..	95	21	...	..	..	0	854.5	31.5
Sevier	3	..	4	46	20	9	1	1	2	242.4	20.7
Shelby	...	4	2	12	2	1	1	..	2	652.4	36.9
Sheridan	1	..	2	20	15	...	..	4	2	398.9	20.3
Wadsworth	...	..	..	116	0	4	..	1	0	1,305.8	36.8
Wheeler	2	1	..	14	4	...	1	..	1	774.7	42.7
Custer	26	..	..	45	2	5	1	4	6	630.3	25.0
Devens	9	..	..	36	6	23	..	2	5	782.9	43.4
Dix	9	..	3	108	21	25	..	3	1	994.1	32.8
Dodge	36	..	..	136	0	44	..	3	14	1,843.3	82.6
Funston	42	..	1	29	11	13	1	2	9	1,016.2	44.1
Gordon	57	..	3	30	1	68	1	..	19	2,036.0	66.3
Grant	15	..	..	38	1	22	..	15	4	500.6	24.2
Jackson	31	1	1	334	3	26	1	..	14	1,888.4	59.7
J. E. Johnston	24	..	1	30	20	12	..	..	1	1,047.5	34.7
A. A. Humphreys	2	..	..	18	2	18	..	..	2	893.0	16.2
Lee	6	..	1	246	16	11	..	..	5	998.3	43.9
Lewis	17	..	5	74	5	10	..	11	2	1,023.3	34.7
Meade	14	..	..	54	17	5	4	1	2	801.0	33.0
Pike	37	..	..	63	16	21	2	2	10	2,036.7	71.4
Sherman	4	..	..	114	6	12	..	5	3	1,145.4	39.4
Taylor	14	..	..	69	2	13	..	3	5	909.4	57.4
Travis	55	2	6	54	3	8	..	..	11	2,503.2	48.2
Upton	14	..	..	218	43	3	2	6	3	1,016.1	39.3
Northeastern Dept.	1	..	..	36	23	3	..	..	0	855.7	30.2
Eastern Dept.	1	..	3	31	25	9	..	2	4	851.3	27.7
Southeastern Dept.	1	..	..	75	8	6	..	1	3	1,100.7	32.4
Central Dept.	3	..	..	22	14	16	..	7	0	1,263.5	62.3
Southern Dept.	10	..	3	170	59	8	..	6	6	1,418.4	41.7
Western Dept.	3	..	..	38	17	7	..	6	2	1,007.0	18.5
Aviation, S. C.	21	..	2	163	0	14	3	13	11	1,228.1	34.8
Alcatraz, D. B.	...	..	..	...	...	...	..	..	0	645.9	15.5
Columbus Bks.	1	..	..	8	0	...	..	1	1	613.0	21.1
Depot, Provisional Corps and Army Troops	10	..	1	62	0	3	5	2	0	1,515.3	35.7
Edgewood - Aberdeen	...	..	..	...	...	1	..	..	0	443.2	13.3
El Paso	...	..	..	...	...	...	..	..	0	298.3	13.3
Hoboken	14	..	2	113	9	13	3	7	3	647,1	48.8
Holabird	...	..	..	...	...	1	..	..	0	478.5	4.1
Jefferson Bks.	6	..	..	371	2	7	1	3	2	3,589.0	81.9
Leavenworth, D. B.	...	..	..	...	...	...	..	..	0	1,160.1	40.7
Logan, Fort	...	..	..	6	2	1	..	5	0	1,008.8	77.0
McDowell, Fort	...	..	1	63	0	2	..	1	0	2,740.5	78.6
Newport News	10	4	3	146	3	5	1	1	4	1,286.1	53.4
Raritan	...	..	..	...	...	...	..	..	..	......	....
Slocum, Fort	3	..	..	33	0	...	..	..	1	1,059.5	34.2
Springfield Armory	...	..	..	...	...	...	..	..	0	804.1	30.9
Thomas, Fort	2	..	..	24	0	5	..	..	0	1,622.9	27.6
Watervleit	...	..	..	2	0	...	..	..	0	406.2	30.0
West Point	...	..	..	...	...	...	..	..	0	448.8	8.6
Natl. Guard Depts.	...	..	..	13	0	7	1	1	0	......	....
Natl. Army Depts.	8	..	1	293	115	23	1	39	1	......	....
Total	543	16	72	3,901	666	522	32	161	178	1,106.2	39.5

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending May 17, 1918	Departmental and Other Troops, Week Ending May 17, 1918	Divisional Camps, Week Ending May 17, 1918	Cantonments, Week Ending May 17, 1918	Expeditionary Forces, Week Ending May 9, 1918
Pneumonia	21.8	12.5	6.7	36.7	21.7
Dysentery	0.6	0.58	1.6	0.2	0.1
Malaria	2.9	2.1	6.4	1.8	1.1
Venereal	156.9	193.1	98.0	151.2	32.3
Paratyphoid	0.0	0.0	0.0	0.0	0.0
Typhoid	0.0	0.0	0.0	0.0	0.2
Measles	21.0	14.6	0.5	20.2	9.3
Meningitis	1.28	1.9	0.9	1.1	2.1
Scarlet Fever	6.4	8.0	1.6	17.1	6.1

NEWS OF THE CANTONMENTS

Camp Zachary Taylor, Lincoln Division (Eighty-Fourth), Louisville, Ky.

May 27, 1918.

CAMP HEALTH IMPROVES

Health conditions continue to improve at Camp Zachary Taylor. The death rate is going down, only four deaths being recorded at the base hospital this month. There are fewer patients at the hospital than at any time since last fall. Measles has been reduced materially, there being but forty-nine suffering from this ailment. At one time there were more than 300 cases of measles. There are less than 100 cases of mumps.

Pneumonia and empyema are declining. The latter disease was never before known to have been so prevalent as it was at army camps throughout the country during the winter. The medical officers have successfully originated methods of treatment. The mortality from this cause has been decreased and the number of complete cures increased.

PERSONAL

Major Milton Board, M. R. C., U. S. Army, has tendered his resignation to Governor Stanley as medical director for the Workmen's Compensation Board, and it has been accepted. Major Board differed with the state administration; it is said, over its policy toward the Kentucky Board of Health, and, failing to have his views accepted, he severed his official connection with the state. He remains registrar of vital statistics for Jefferson County and a major in the Medical Reserve Corps.

COMMISSIONS ACCEPTED

ALABAMA

A. L. KELLEY, Birmingham
P. M. KYSER, Birmingham
J. MEYER, Birmingham
J. L. BOOTH, Buhl
R. C. SPEIR, Furman
E. L. SCOTT, Greenville
G. H. MOORE, Opelika
B. B. WARWICK, Talladega

ARIZONA

R. E. THOMAS, Phoenix

ARKANSAS

H. L. GARDINER, Little Rock
O. H. KING, Hot Springs
J. L. SMILEY, Siloam Springs

CALIFORNIA

J. A. KEOWN, Alhambra
H. C. CRUM, Hayward
E. C. GRINER, Lake Port.
S. Y. VAN METER, Los Angeles
C. D. FANTON, Riverside
W. P. PORTER, San Francisco
M. H. HIRSCHFELD, San Francisco
H. T. SUMMERSGILL, San Francisco
J. A. YOUNG, San Francisco

COLORADO

W. H. HALLEY, Pueblo
H. WORK, Pueblo

CONNECTICUT

B. C. PASUTH, Bridgeport
J. R. KNOWLES, Danielson
J. F. O'BRIEN, Hartford
J. F. ROONEY, Hartford
R. S. STARR, Hartford
T. L. STORY, Hartford
B. C. MARANTZ, New Haven
W. R. MILLER, Southington

DELAWARE

J. H. W. AYERS, Wilmington

DISTRICT OF COLUMBIA

T. E. NEIL, Washington
F. M. NOLAN, Washington
C. C. ROGERS, Washington

FLORIDA

W. C. WHITE, Live Oak
R. R. NIBLACK, New Smyrna

GEORGIA

E. J. HALL, Adel
J. W. BURNEY, Atlanta
M. B. HUTCHINS, Atlanta

ILLINOIS

H. S. MAUPIN, Bath
C. A. ELLIOTT, Chicago
W. H. HOLMES, Chicago
G. W. LAWSON, Chicago
E. D. QUINLAND, Chicago
A. K. SUTCH, Chicago
C. D. WILKINS, Chicago
E. J. WHEATLEY, Danville
C. A. ROBBINS, Dixon
R. T. WOODYATT, Evanston
O. F. MAY, Normal
W. J. WEISHEW, Oswego

INDIANA

H. H. HUBBARD, Boswell
H. C. [illegible]
H. S. [illegible]
J. R. [illegible]
J. A. [illegible], Terre Haute
W. C. ZELLER, Union City

IOWA

J. T. HANNA, Kellogg
A. J. ROSS, Perry
P. C. INGHAM, Whiting
G. F. HARTWIG, Young America

KANSAS

E. W. JOHNSON, Coffeyville
H. E. McCARTHY, Kansas City
L. M. SCHRADER, Kinsley
R. H. HERTZLER, Newton
G. W. HIGGINBOTHAM, Wichita
W. P. GUY, Winfield

KENTUCKY

J. L. STILLINGS, Atlanta
B. O. MOORE, Hopkinsville
S. ANDERSON, Louisville
R. L. HOLMES, Louisville
W. P. K. HOWARD, Louisville
F. V. GILGORE, Louisville
L. P. SPEARS, Louisville
R. M. Brown, Quicksand

LOUISIANA

J. W. KIRBY, Franklin
G. M. JONES, New Orleans
E. W. REEVES, New Orleans
W. C. ROYALE, New Orleans
J. M. SINGLETON, New Orleans

MAINE

J. S. BRAGG, Winter Harbor

MARYLAND

N. H. BRUSH, Baltimore
G. G. E. CROSS, Baltimore
S. SNYDER, State Sanitarium

MASSACHUSETTS

T. H. ASCHMANN, Boston
F. H. COLBY, Boston
D. C. GREENE, Boston
R. N. HATT, Boston
D. H. NISBET, Boston
P. M. PAPOULACOS, Boston
A. O. RAYMOND, Boston
L. H. ROCKWELL, Boston
L. M. SPEAR, Boston
G. V. DEARBORN, Cambridge
H. M. ENGLISH, Foxborough
E. J. SAWYER, Gardner
G. H. GREEY, Lynn
R. I. WALKER, New Bedford
C. W. ROBERTSON, North Dana
R. N. NYE, Springfield
H. ZIMMERMAN, Springfield
M. M. JORDAN, Westborough
F. R. SEDGLEY, West Roxbury

MICHIGAN

R. L. HADEN, Detroit
M. M. HYMAN, Detroit
F. C. MAYNE, Detroit
A. B. PERSLEY, Detroit
C. P. CLARK, Flint
A. W. HEINE, Mount Clemens
W. VAN DE ERVE, Norway

MINNESOTA

D. F. McCANN, Bemidji
W. H. CONNER, Finlayson
H. S. J[illegible]
M. SE[illegible]
H. H. [illegible]
G. L. [illegible]
H. O. [illegible] Falls
J. B. NEIL, Rochester
B. J. WEIGEL, St. Paul
G. V. LYNCH, Winona

MISSISSIPPI

F. A. ROGERS, Agness
J. M. GUTHRIE, Meridian

MISSOURI

H. E. BRAUN, Independence
C. E. BRISCOE, Kansas City
M. GOLDMAN, Kansas City
G. W. SMITH, Kansas City
E. L. STEWART, Kansas City
W. L. SHARP, Little Rock
F. F. ALSUP, St. Louis
C. J. CLAPSADDLE, St. Louis
L. P. MACKLIN St. Louis
H. E. MUDD, St. Louis
J. A. ROSSEN, St. Louis
G. L. TONELLI, St. Louis
A. L. STEPP, Vanduser
C. L. ARMSTRONG, Webster Groves
W. S. CULPEPPER, Willow Springs

MONTANA

W. L. KELL, Browning
C. A. GARDNER, Columbus
W. COTTON, Forsyth

NEBRASKA

C. C. COPELAND, Beaver City
S. J. STEWART, Hastings

NEW HAMPSHIRE

J. C. LAWLOR, Dover

NEW JERSEY

W. L. McCANTY, Barker
W. S. LONG, Haddonfield
M. MORRISON, Montclair
W. H. WHITON, Neshanic Station
S. BROOK, Newark
J. A. FREESE, Newark
E. M. MOUNT, New Jersey
T. L. CALDRONEY, Paterson
H. D. BELLIS, Trenton

NEW MEXICO

JOS. W. LACKEY, Carlsbad

NEW YORK

E. L. WILSON, Bolton Landing
L. FASKE, Brooklyn
W. H. FIELD, Brooklyn
M. GROLLMAN, Brooklyn
F. MOSKOWITZ, Brooklyn
A. SHORR, Brooklyn
G. J. SIGNORELLI, Brooklyn
W. S. SMITH, Brooklyn
L. ZIMTBAUM, Brooklyn
D. C. [illegible]
L. E. [illegible]
T. H. [illegible]
W. Z. [illegible]
B. F. HANENSTEIN, Fort Porter
H. C. TOOKER, Larchmont
J. I [illegible]
E. I [illegible]
L. [illegible] City
R. [illegible]
L. [illegible] York City
W. C. BUNTIN, New York City
L. B. FARRIOR, New York City
S. S. FERN, New York City
S. S. FRIEDMAN, New York City
W. M. HANDLEMAN, New York City
H. HERSHBERG, New York City
H. SMITH, New York City
W. C. STADIE, New York City
H. TRAUTMANN, New York City
D. TROPAUER, New York City
F. S. SCHOONOVER, Rochester
G. J. HOGBEN, Rye
W. S. MARTENS, Shrub Oak
J. R. PATTON, Staten Island
F. T. OWENS, Utica

NORTH CAROLINA

G. S. MacPHERSON, Asheville
P. H. RINGER, Asheville
P. M. KING, Charlotte
M. C. KING, Franklinton
L. T. DELANY, Raleigh

OHIO

C. C. PATTON, Ashland
D. H. COLEMAN, Cincinnati
B JOHNS, Cincinnati
H. M. LEE, Cincinnati
O. H. PINNEY, Cincinnati
R. H. VANCE, Cincinnati
H. B. WEISS, Cincinnati
J. D. OSMOND, Cleveland
G. A. ROWLAND, Columbus
R. T. SAUNDERS, Erie
F. C. HUNT, Gerard
J. F. EARP, Holgate
JOHN D. NOURSE, Kenton
C. GEO. SMITH, Marion
B. LEE, Massillon
T. E. BROWN, Youngstown

OKLAHOMA

W. A. AITKEN, Enid
R. E. LONG, Guthrie
W. A. COOK, Tulsa
R. L. MITCHELL, Vinita

OREGON

B. F. SCAIEFE, Eugene
J. PRINZING, Ontario
C. S. MENZIES, Portland
L. E. STORY, Portland

PENNSYLVANIA

W. J. JONES, Allentown
A. M. BENNARDI, Bradford
A. HUNTER, McKeesport
J. T. BUNTING, Philadelphia
J. M. CAHAN, Philadelphia
C. E. CASE, Philadelphia
A. R. ROZPLOCH, Philadelphia
H. C. SANGREE, Philadelphia
G. S. VAGAN, Pittsburgh
R. H. ARMSTRONG, Scranton
R. McG. HURSH, Steelton
I. A. DARLING, Warren
W. WEBB, West Chester
L. M. HARTMAN, York

RHODE ISLAND

J. M. McCARTHY, Providence

TENNESSEE

T. E. WRIGHT, Bethpage
T. M. HARPER, Medina
O. N. BRYAN, Nashville
W. J. EZELL, Paris
J. E. RANDOLPH, Shelbyville

VERMONT

S. MITCHELL, Richmond

VIRGINIA

W. H. SQUIERS, Burlington
R. W. H. BUCKNER, Hopewell
M. S. FITCHETT, Norfolk
C. WILLCOX, Norfolk
J. W. MARTIN, Richmond
A P. JONES, Roanoke
H. H. TROUT, Roanoke
H. R. LIVESAY, Waynesboro

WASHINGTON

H. H. SLATER, Deer Park
V. PIRO, Ferndale
W. W. BRAND, Rosalia
H. H. HEWITT, Seattle

WEST VIRGINIA

S. H. POST, Clarksburg
E. P. SMITH, Fairmont
J. C. FORD, Hansford
H. E. WHALEY, Hansford
S. GRAY, Martinsburg
C. A. CLEMMER, Weirton
J. E. MILLER, Widem
W. W. ORR, Worthington

WISCONSIN

A. J. LOOZE, Brodhead
G. M. SMITH, Chippewa
H. F. WOLTERS, Milwaukee
H. H. AINSWORTH, Richland Center
C. N. SONNENBURG, Sheboygan
L. H. OLIVER, Siren
H. C. DALLWIG, Wauwatosa

ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

To Camp Crane, Allentown, Pa., for duty, from Fort Riley, Lieut.-Col. ARTHUR W. MORSE.

To Camp Dix, Wrightstown, N. J., for duty, from Fort Riley, Lieut.-Col. HORACE D. BLOOMBERGH, Major JOSEPH A. WORTHINGTON; from Camp Devens, Lieut. HARRY H. TOWLER.

To Hancock, Augusta, Ga., as assistant to the camp surgeon, from Camp Zachary Taylor, Lieut.-Col. WM. M. SMART. *To Camp Jackson*, Columbia, S. C., for duty from Camp Zachary Taylor, Lieut.-Col. LUTHER H. POUST. Base hospital, from San Francisco, Major HARRY L. DALE.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Camp Sevier, Lieut. ROBERT B. McGENEHY.

To Camp MacArthur, Waco, Tex., as division surgeon, from Plattsburg Barracks, Lieut.-Col. ALLIE W. WILLIAMS. On completion *to Camp Travis*, Fort Sam Houston, and *Camp Logan*, Houston, Tex., for conference, and on completion *to his proper station*, from Camp Bowie, Lieut.-Col. LOUIS H. HANSON.

To Camp McClellan, Anniston, Ala., as assistant to the camp surgeon, from Camp Kearny, Lieut.-Col. CHARLES W. DECKER.

To Camp Pike, Little Rock, Ark., and on completion *to Camp Doniphan*, Fort Sill., Okla., and *Camp Dodge*, Des Moines, Ia., for conference, and on completion *to his proper station*, from Camp Custer, Lieut.-Col. NEAL N. WOOD.

To Camp Raritan, Metuchen, N. J., as camp surgeon, from Camp Dix, Major HENRY L. KRAFFT.

To Camp Sheridan, Montgomery, Ala., for duty, and on completion *to his proper station*, Col. ROBERT E. NOBLE. As assistant to the camp surgeon, from Camp Raritan, Major CHARLES C. HILLMAN.

To Camp Sherman, Chillicothe, Ohio, as assistant to the camp surgeon, from Edgewood, Lieut.-Col. GLENN I. JONES.

To Camp Travis, Fort Sam Houston, Tex., as assistant to the camp surgeon, from Camp Baker, Lieut.-Col. WILLIAM L. LITTLE.

To Edgewood, Md., as camp surgeon, from San Francisco, Major LEO. C. MUDD.

To Fort Benjamin Harrison, Ind., for duty, from Fort Riley, Lieut. LEO P. BELL.

To Fort Monroe, Va., for duty, and on completion *to his proper station*, Col. VICTOR C. VAUGHAN.

To Fort Oglethorpe as an instructor, from Fort Riley, Major WILLIAM M. RICHARDSON. For instruction, Lieut. LEE C. VORRUS.

To Fort Riley as assistant to the camp surgeon, from Newport News, Major ERNEST C. McCULLOCH.

To Hoboken, N. J., for duty, from Fort Riley, Lieut.-Col. WILLIAM H. TEFFT, Major SAMUEL J. TURNBULL; from Fort Oglethorpe, Major CLARENCE P. BAXTER.

To Newport News, Va., for duty, from San Francisco, Major MORRISON C. STAYER.

To New York City, for duty, and on completion *to his proper station*, Col. DENNE C. HOWARD.

To Rockefeller Institute for consultation, and on completion *to his proper station*, Lieut.-Col. EDWARD B. VEDDER.

To San Francisco, Calif., from Philippine Department, Major WILSON C. VONKESSLER.

To San Juan, Porto Rico, as commanding officer of base hospital, from Camp Las Casas, Major PHILIP B. CONNELLY.

To Washington, D. C., for consultation, and on completion *to Fort Bayard, N. H.*, as commanding *officer* of U. S. Army General Hospital, from Fort Oglethorpe, Col. HENRY P. BIRMINGHAM. *On completion to Camp Sevier, Greenville*, S. C., for duty, from Camp Lee, Lieut.-Col. CONDON C. McCORNACK.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp Dix, Wrightstown, N. J., evacuation hospital, from Fort Riley, Major HERBERT P. COLE, Mobile.

To Camp Grant, Rockford, *Ill.*, base hospital, from Atlanta, Capt. ROBERT E. HALE, Bellamy.

To Camp Sevier, Greenville, S. C., base hospital, from Camp Jackson, t. ROBERT GOLDTHWAITE, Montgomery.

Camp Shelby, Hattiesburg, Miss., as assistant to camp surgeon, TAXEY D. HAAS, Mobile.

ort Riley, evacuation hospital, from Fort McPherson, Major Y E. DRENNEN, Birmingham.

Arizona

To Camp Beauregard, Alexandria, La., as member of a board examining the command for tuberculosis, from Camp Logan, Lieut. FREDERICK F. MILLER, Miami.

To Chicago, Ill., Northwestern University School of Medicine, for instruction, from Jefferson Barracks, Lieut. JACOB LER. PRITCHARD, Winslow.

Arkansas

To Camp Logan, Houston, Tex., base hospital, from Fort Riley, Lieut. MILES E. FOSTER, Fort Smith.

To Camp Pike, Little Rock, Ark., base hospital, from Fort Riley, Lieut. THERON E. FULLER, Texarkana.

To Fort Oglethorpe for instruction, Lieut. EDWIN B. BUCHANAN, Texarkana.

California

To Camp A. A. Humphreys, Accotink, Va., for duty, from Army Medical School, Lieut. RAY W. KARRAS, Soldiers' Home.

To Camp Sevier, Greenville, S. C., for duty, from Army Medical School, Lieuts. CARLTON S. ALLEN, Los Angeles; JAMES G. ANDERSON, Petaluma.

To Chicago, Ill., Northwestern University School of Medicine for instruction, from Fort Riley, Lieuts. WALTER C. S. KOEBIG, JAMES G. McLAUGHLIN, Los Angeles.

To Hoboken, N. J., base hospital, from Fort Oglethorpe, Capt. EMIL F. THOLEN, Los Angeles; from Camp Bowie, Lieuts. WALTER M. HOLLERAN, GEORGE F. SCHENCK, Los Angeles; ROY F. RUTH, Upland.

To Manila, Philippine Islands, Philippine Department, for duty, from Camp Dodge, Lieut. RAYMOND B. McNAMARA, San Francisco; from Camp Kearny, Lieut. GABRIEL J. J. VISCHI, San Francisco.

To Philadelphia, Pa., University of Pennsylvania, for duty, from Camp Lee, Major FREDERICK P. GAY, Berkeley.

To report by wire to the commanding general, Western Department, for assignment to duty, Lieut. CHARLES F. CURTIS, Los Angeles.

To Rockefeller Institute for instruction in bacteriology, and on completion *to Army Medical School* for duty, Lieut FREDERICK W. HERZER, Loma Linda.

To San Francisco, Calif., Letterman General Hospital, for temporary duty, Major CLARENCE G. TOLAND, Los Angeles.

The following order has been revokel: *To Los Angeles, Calif.*, for instruction in orthopedic surgery, Lieut. CHARLES A. WARMER, Ontario.

Canal Zone

To report to the governor, Panama Canal, for duty, Capt. CHARLES A. HEARNE, Lieut. HERBERT C. WATTS, Cristobal.

Colorado

To Camp A. A. Humphreys, Accotink, Va., for duty, from Army Medical School, Lieut. JOSEPH W. PECONY, Denver.

Connecticut

To New York City, Bellevue Hospital, for instruction, and on completion *to his proper station*, from Camp Devens, Capt. VINCENT J. IRWIN, Jr., Granby; Lieut. ULRIC PLANTE, Hartford.

District of Columbia

To Camp Crane, Allentown, Pa., for duty, from New York, Major HARRY H. KERR, Washington.

To Camp Grant, Rockford, Ill., with the board examining the command for nervous and mental diseases, from Camp Zachary Taylor, Capt. JOHN J. MADIGAN, Washington.

To Camp Jackson, Columbia, S. C., for duty, Lieut. WILFRED N. BARTON, Washington.

To Camp Wadsworth, Spartanburg, S. C., as division psychiatrist, from Camp Meade, Major ROSS McC. CHAPMAN, Washington.

To Fort Benjamin Harrison, Ind., for duty, from Fort Riley, Lieut. LEO F. BELL, Washington.

To Fort Oglethorpe for instruction, Capts. JAMES B. LAUGHLIN, GUY S. SAFFOLD, Washington.

To Washington, D. C., for duty, Capt. ALEXANDER Y. P. GARNETT, Washington.

Florida

To Camp Wheeler, Macon, Ga., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Capt. JULIAN E. GAMMON, Jacksonville.

Georgia

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Sherman, Lieut. STEPHEN T. BROWN, Atlanta; from Garden City, Lieut. WALTER J. STEWART, Sylvester.

To Camp Lee, Petersburg, Va., for duty, from Fort McPherson, Lieut. JOHN R. MANLEY, Frolona.

To Camp Upton, L. I., N. Y., for duty, from Army Medical School, Lieut. CHESTER A. WITMEN, Waycross.

To Fort McPherson, Ga., for *temporary* duty, from Army Medical School, Lieut. WILLIAM B. PHILIPS, Atlanta.

To Fort Oglethorpe for instruction, Lieut. BARNEY C. WEINKLE, Atlanta.

To Newport News, Va., for duty, from Camp Wheeler, Lieut. JAMES H. NICHOLSON, Madison.

To New York City, Bellevue Hospital, for instruction, and on completion *to his proper station*, from Camp Devens, Lieut. WILLIAM E. GROVE, Johnstown.

The following order has been revoked: *To Camp Joseph E. Johnston*, Jacksonville, Fla., for duty, Capt. JOHN H. HALL, Atlanta.

Idaho

To Chicago, Ill., Northwestern University School of Medicine, for instruction, from Jefferson Barracks, Lieut. DUNCAN L. ALEXANDER, Twin Falls.

Illinois

To Camp Beauregard, Alexandria, *La.*, with the board examining the troops for cardiovascular diseases, from Camp Upton, Lieut. FRED M. SMITH, Chicago.

To Camp Bowie, Fort Worth, Tex., base hospital, from Fort Riley, Lieut. RUSSELL A. HENNESSEY, Chicago.

To Camp Crane, Allentown, Pa., base hospital, from Camp Joseph E. Johnston, Capt. CHARLES RICKSHER, Kankakee.

To Camp Dix, Wrightstown, N. J., *Camp Devens*, Ayer, Mass., *Camp Upton, L. I., N. Y.*, and on completion *to Army Medical School*, for duty, from Allentown, Pa., Lieut. THOMAS A. WAYLAND, Dallas City.

To Camp Dodge, Des Moines, Ia., base hospital, from Camp MacArthur, Lieut. FRANCIS T. H'DOUBLER, Chicago.

To Camp Jackson, Columbia, S. C., for duty, Lieuts. ARTHUR K. BALDWIN, JOHN W. DEVRY, Chicago.

To Camp Lee, Petersburg, Va., base hospital, from Camp Meade, Capt. WINFIELD G. McDEED, Monticello. For duty, from Army Medical School, Lieuts. WILLIAM D. NAPIANTEK, RICHARD TORPIN, Chicago.

To Camp Sheridan, Montgomery, Ala., base hospital, from Fort Riley, Lieut. FRED F. SCHWARTZ, Chicago. For duty, Lieut. PHILIP H. WOLFRAM, Chicago. With the board examining the command for nervous and mental diseases, from Fort McPherson, Lieut. WILSON K. DYER, Kankakee.

To Camp Wadsw[illegible] as member of tuberculosis board, from Fort [illegible] RT G. VAUGHAN, Oak Park; from Camp [illegible] H. GBURCZYK, Joliet. For duty, from Fo[illegible] AN L. PHIPPS, Toledo.

To Charleston, S[illegible] Wheeler, Lieut. THEODORE P. REUSCH, Collinsville.

To Chicago, Ill., Northwestern University School of Medicine, for instruction, Lieut. SHEPPARD REMINGTON, Chicago.

To Fort Leavenworth, Kansas, for duty, Lieut. RUSSEL D. HERROLD, Chicago.

To Fort Oglethorpe, for instruction, Lieut. BROOKS J. MUSSELWHITE, Chicago.

To Hoboken, N. J., for duty, from Camp Wheeler, Lieut. CHARLES McLAUGHLIN, New Berlin.

To New Haven, Conn., for duty, from Chicago, Capt. CLARENCE W. LEIGH, Chicago; from Fort Riley, Lieut. JOHN M. HOFFMAN, Champaign.

Indiana

To Camp Lee, Petersburg, Va., for duty, from Army Medical School, Lieut. PORTER W. HOPKINS, East Chicago.

To Camp McClellan, Anniston, and *Camp Sheridan*, Montgomery, Ala., and *Camp Wheeler*, Macon, Ga., for conference, and on completion *to his proper station*, from Camp Gordon, Major SIMON J. YOUNG, Valparaiso.

To Camp Pike, Little Rock, Ark., base hospital, Capt. THOMAS Z. BALL, Waveland.

To Camp Sheridan, Montgomery, Ala., for duty, Lieut. LEE M. GREEN, Easthaven.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Chicago, Lieut. WILFRED P. FRELIGH, Terre Haute.

To Fort Oglethorpe for instruction, Lieut. JACOB ADER, Danville.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Capt. GEORGE H. HOCKETT, Anderson.

Iowa

To Camp Crane, Allentown, Pa., base hospital, from Fort Oglethorpe, Lieut. GEORGE R. NARRLEY, Keokuk. For duty, from Camp Grant, Lieut. FREDERICK W. SALLANDER, Fort Madison.

To Camp Dix, Wrightstown, N. J., as division psychiatrist, from Camp Stuart, Capt. SAMUEL C. LINDSAY, Independence.

To Chicago, Ill., Northwestern University School of Medicine, for instruction, from Jefferson Barracks, Capt. ALBIN B. PHILLIPS, Clear Lake; from Camp Logan, Lieut. BENJAMIN C. HAMILTON, Jr., Jefferson.

To Fort Sam Houston, Tex., [illegible] from Jefferson Barracks, Capt. CHARLES B. T[illegible]

To Manila, Philippine Islands, [illegible] duty, from Fort McHenry, Major CHARLE[illegible]

Kansas

To Camp A. A. Humphreys, Accotink, Va., for duty from Army Medical School, Lieut. HOWARD E. MARCHBANKS, Pittsburg.

Kentucky

To Camp A. A. Humphreys, Accotink, Va., for duty, from Army Medical School, Lieut. WILLIAM P. K. HOWARD, Willins Creek.

To Camp Crane, Allentown, Pa., for duty, from Camp MacArthur, Lieut. WILLIAM B. GODDARD, Harrodsburg.

To Camp Meade, Annapolis Junction, Md., with the board examining the troops for cardiovascular diseases, from Fort Riley, Capt. ALFRED H. KELLY, Shivley.

To Camp Sevier, Greenville, S. C., for duty, from Army Medical School, Lieut. WILLIAM P. FOREMAN, Corinth.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to Camp Zachary Taylor*, Louisville, Ky., base hospital, from Camp Dix, Lieut. WILLIAM H. NEEL, Bowling Green.

To Fort Oglethorpe for instruction, Lieut. WILLIAM F. PORTER, Bardstown.

To Hoboken, N. J., for duty, from Camp Sherman, Lieut. LUTHER BACH, Jackson.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to his proper station*, from Camp Jackson, Lieut. WILLIAM H. NASH, Finchville.

Louisiana

To Camp Lee, Petersburg, Va., for duty, from Army Medical School, Lieut. LOUIS A. HERBERT, New Orleans.

To Camp Sevier, Greenville, S. C., for duty, from Army Medical School, Lieut. JOHN B. FERRAN, Jr., New Orleans.

Maine

To Camp Sevier, Greenville, S. C., for duty, from Army Medical School, Lieut. FRANK O. BLOSSOM, Caribou.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Major HARRISON B. WEBSTER, Castine.

Maryland

To Camp Crane, Allentown, Pa., for duty, from Camp Hancock, Lieut. JACK M. HUNDLEY, Jr., Baltimore.

To Camp Wheeler, Macon, Ga., for duty, from Fort Oglethorpe, Lieut. MARCUS D. SMITH, Cambridge.

To Fort Oglethorpe for instruction, Major JOHN HOWLAND, Baltimore.

To New York City, for duty, and on completion *to his proper station*, Major ROBERT T. TAYLOR, Baltimore.

To Philadelphia, Pa., University Hospital, for instruction and on completion *to his proper station*, from Camp Jackson, Lieut. WILLIAM L. MILLEA, Baltimore.

To Rockefeller Institute for instruction in laboratory work, and on completion *to his proper station*, from Edgewood, Lieut. JOHN F. LUTZ, Baltimore.

The following order has been revoked: *To Colonia, N. J.*, for duty, Capt. HARRY L. WHITTLE, Baltimore.

Massachusetts

To Camp Crane, Allentown, Pa., base hospital, from Camp Meade, Capt. HARRY C. BURRELL, Medford. For duty, from Camp Jackson, Lieut. WALTER H. LACEY, Wollaston.

To Camp Devens, Ayer, Mass., base hospital, Lieut. THEODORE H. ASCHMANN, Boston.

To Camp Lee, Petersburg, Va., *Camp Jackson*, Columbia, S. C., and *Camp Wheeler*, Macon, Ga., for consultation, and on completion, *to his proper station*, from Camp Devens, Major LESLEY H. SPOONER, Boston. For duty, from Army Medical School, Lieut. HENRY J. KEANEY, Everett.

To Camp Meade, Annapolis Junction, Md., base hospital, from Camp Devens, Major SAMUEL J. MIXTER, Boston.

To Camp Jackson, Columbia, S. C., for duty, Lieut. DAVID E. HARRIMAN, Springfield.

To Camp Sevier, Greenville, S. C., for duty, from Army Medical School, Lieuts. FRANK S. HALE, Brookline; RUFUS W. LONG, Manchester.

To Cape May, N. J., for temporary duty, Capt. GORDON BERRY, Worcester.

To Fort McPherson, Ga., for consultation, and on completion *to his proper station*, Major KENDALL EMERSON, Worcester.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Capt. WILLARD S. PARKER, Boston.

To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, Lieut. CLARENCE H. BIRDSALL, Boston.

To Newport News, Va., for duty, from Army Medical School, Lieut. EDWARD W. YOUNG, New Bedford.

To Orono, Maine, University of Maine, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, and on completion *to his proper station*, from Camp Devens, Lieut. WILLIAM J. DILLON, Springfield.

To Rock Island, Ill., for duty, from Army Medical School, Capt. GEORGE G. PARLOW, Fall River.

To Walter Reed General Hospital, Takoma Park, D. C., for temporary duty, from Army Medical School, Lieut. EDWARD KING, Boston.

Michigan

To Camp A. A. Humphreys, Accotink, Va., for duty, from Army Medical School, Lieut. HAROLD L. HURLEY, Jackson.

To Camp Crane, Allentown, Pa., base hospital, from Fort Oglethorpe, Lieut. WILLIAM C. HOEBEKE, Kalamazoo. For duty, from Camp Shelby, Capt. DAVID D. TODD, Calumet; from Camp Hancock, Lieut. WILLIAM A. HYLAND, Grand Rapids.

To Camp Logan, Houston, Tex., base hospital, from Fort Riley, Lieut. OTIS B. MALLOW, Detroit.

To Camp Jackson, Columbia, S. C., for duty, Lieuts. ISADORE I. BITTKER, HENRY R. BOYES, Detroit.

To Camp Sevier, Greenville, S. C., for duty, from Army Medical School, Lieut. WALTER W. J. BIEN, Union City. With the board examining the troops for cardiovascular diseases, Lieut. CHARLES E. LEMMON, Detroit.

To Camp [illegible] Miss., with the board examining the troops for [illegible] from Camp Zachary Taylor, Lieut. KENNETH [illegible]

To Camp Zachary Taylor, Louisville, Ky., base hospital, Capt. JAMES A. ELLIOTT, Battle Creek.

To Fort Oglethorpe for instruction, Capt. ARTHUR E. OWEN, Lansing; Lieut. ALFRED J. RADZINSKI, Detroit.

To Fort Riley for duty, from Fort Oglethorpe, Capt. EDWIN J. EVANS, Greenland.

To Fort Snelling, Minn., for duty, from Fort Oglethorpe, Capt. HERMAN J. RUNO, Detroit.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Capt. EDWARD A. FLORENTINE, Ewen.

To Waynesville, N. C., for duty, from Army Medical School, Lieut. ROBERT P. STARK, Allegan.

Minnesota

To Camp A. A. Humphreys, Accotink, Va., for duty, from Army Medical School, Lieut. MICHAEL A. DESMOND, Glenwood.

To Camp Crane, Allentown, Pa., base hospital, from Camp Grant, Lieut. ROBERT E. SPINKS, Middle River; from New York City, Lieut. PAUL W. GIESSLER, Minneapolis. For duty, from Williamsbridge, Capt. RALPH T. KNIGHT, Minneapolis.

To Camp Kelly, San Antonio, Tex., U. S. Army School, from Dallas, Capt. JOHN C. WILKINSON, Red Lake Falls.

To Camp Lee, Petersburg, Va., for duty, from Army Medical School, Lieut. HAROLD B. MARSH, Rochester.

To Camp Sevier, Greenville, S. C., for duty, from Army Medical School, Lieut. HARRY W. ARNDT, Payneville.

To Chicago, Ill., Northwestern University Medical School, for instruction, Lieut. BOTTOLF T. BOTTELFSON, Halstead, from Jefferson Barracks, Lieut. WALTER H. HALLORAN, St. Paul.

To Fort Crockett, Tex., for duty, from Fort Leavenworth, Capt. WINFIELD S. NICKERSON, Long Lake.

To Fort McPherson, Ga., base hospital, from Camp Doniphan, Lieut. EDWARD J. ENGBERG, St. Paul.

To Hoboken, N. J., for duty, from Camp Grant, Lieut. JOHN J. O'HEARN, Rochester.

To Madison, Wis., University of Wisconsin, to make physical examinations and give medical attention to the drafted men enrolled at this institution, and on completion *to his proper station*, from Camp Grant, Lieut. JOSEPH D. WALLER, Wilmont.

Mississippi

To Camp A. A. Humphreys, Accotink, Va., for duty, from Army Medical School, Lieut. RICHARD B. AUSTIN, Knox.

To Camp Devens, Ayer, Mass., from New Haven, Lieut. ELI E. FARMER, Dockery.

To Manila, Philippine Islands, Philippine Department, for duty, from Camp Lewis, Lieut. FRANK C. SMITH, Gloster.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to his proper station*, from Camp Jackson, Lieut. REGINALD F. ANNIS, Stillmore.

Missouri

To Camp A. A. Humphreys, Accotink, Va., for duty, from Army Medical School, Lieut. SAMUEL E. GASTON, Meta.

To Camp Crane, Allentown, Pa., base hospital, from Camp Upton, Capt. VIRGIL LOEB, St. Louis. For duty, from Camp Wadsworth, Lieut. JOSEPH L. HURTON, St. Louis.

To Camp Doniphan, Fort Sill, Okla., base hospital, from Fort Oglethorpe, Capt. RALPH E. NIEDRINGHAUS, St. Louis.

To Camp Hancock, Augusta, Ga., *as sanitary inspector, from* Fort Riley, Capt. WILLIAM J. LYNN, Kansas City. Base hospital, from Williamsbridge, Lieut. ZACHARIAN G. JONES, Kansas City.

To Camp Jackson, Columbia, S. C., for duty, *Lieut.* LOUIS E. PRINTY, St. Louis.

To Camp MacArthur, Waco, Tex., base hospital, *from Fort Riley,* Lieut. FRED GASSER, Pierce City.

To Camp Pike, Little Rock, Ark., *base hospital, from Fort Riley,* Lieut. FRANK A. ELDERS, Bloomsdale.

To Camp Upton, L. I., N. Y., for duty, *from Army Medical School,* Capt. HUBERT B. BEEDLE, St. Louis; Lieut. HUGH J. WITTWER, St. Louis.

To Camp Zachary Taylor, Louisville, Ky., *base hospital, from Mayo* Clinic, Lieut. PATRICK McGENNIS, St. Louis.

To Hoboken, N. J., for duty, from Pittsburgh, Lieut. RICHARD S. BATTERSBY, Shelbina.

To Lakewood, N. J., for conference, and on completion *to New York City,* and *Allentown, Pa.,* for duty, and *on completion to his proper station,* Major FREDERICK W. BAILEY, St. Louis.

To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, from Dallas, Capt. FREDERICK C. SIMON, St. Louis; from Austin, Lieut. JOHN H. TIMBERMAN, Marston.

To Manila, Philippine Islands, Philippine Department, for *duty, from* Fort McHenry, Major HAROLD C. HERRICK, St. *Louis; from* Camp MacArthur, Lieut. JEROME L. RAWHAUSER, Greenville.

The following order has been revoked: *To Camp Hancock,* Augusta, Ga., as assistant to camp surgeon, from West Point, Lieut. ROY F. MILLS, Odessa.

Montana

To Blacksburg, Va., Virginia Polytechnic Institute, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, and on completion *to his proper station,* from Camp Lee, Lieut. FERRIS L. ARNOLD, Billings.

Nebraska

To Austin, Tex., Texas State University, *for duty, from* Waco, Lieut. CHARLES L. HOUSEL, Ansley.

To Camp A. A. Humphreys, Accotink, Va., for duty, from Army Medical School, Capt. OSCAR F. LANG, Falls City.

To Camp Travis, Fort *Sam Houston,* Tex., base hospital, from Fort Riley, Lieut. LOYD H. FOCHTMAN, Cozad.

To Chicago, Ill., Northwestern University School of Medicine, for instruction and on completion *to his proper station,* from Fort Omaha, Capt. ROY CROOK, Winnetoon; from Jefferson Barracks, Lieuts. J. IRVIN LIMBURG, Walthill; JOHN L. LINN, Woha.

To Fort Des Moines, Ia., base hospital, from Fort Riley, Capt. HOMER DAVIS, Genoa.

To Manila, Philippine Islands, Philippine Department, for duty, from Camp Dodge, Lieuts. CLARENCE E. SMART, Alliance; CHARLES P. CHARLTON, Palmyra; RAYMOND B. McNAMARA, Wynet.

New Hampshire

To Camp Upton, L. I., N. Y., for duty, from Camp Sevier, Lieut. MAURICE A. STARK, *Goffstown.*

To Fort McPherson, Ga., for duty, from Cincinnati, Capt. JAMES B. WOODMAN, Franklin.

New Jersey

To Camp Sheridan, Montgomery, Ala., for duty, Lieut. CHARLES W. TITUS, Newark.

To Camp Upton, L. I., N. Y., for duty, Capt. HARRY M. O'REILLY, *Summit.*

To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieut. HENRY KLAUS, Jr., West *Hoboken.*

To New York City, Bellevue Hospital, for instruction, and on completion *to his proper station,* from Camp Devens, Lieut. ARTHUR J. ELLIS, Newark.

New Mexico

To Camp Wadsworth, Spartanburg, S. C., as member of a board examining the command for tuberculosis, from Camp Logan, Lieut. SIDNEY M. EDMONDSON, Clayton.

New York

To Baltimore, Md., each week for three months to inspect and give instruction to the enlisted men, and on completion *to his proper station,* Lieut. WILLIAM G. PHILLIPS, Jr., Brooklyn.

To Camp American University, Washington, D. C., for duty in the
To Camp American University. Washington, D. C., for duty in the
laboratory, from Camp Meade, Capt. JEAN R. OLIVER, New York.
To Camp Beauregard, Alexandria, La., as member of a board examin-
ing the command for tuberculosis, from Camp Logan, Capt. GILBERT
W. CRISSEY, Mechanicville.
To Camp Crane, Allentown, Pa., for duty, *from* Camp Beauregard,
Lieut. EDWARD P. FLOOD, New York; from Camp *Devens,* Lieut.
ARTHUR P. STOUT, New *York; from* Camp *Dix, Major* SIDNEY
R. BURNAP, New York; from Camp Gordon, Lieut. PHILIP L. TUR-
NER, New York; from Camp Hancock, Lieuts. *LEON E. DE YOE,*
ROBERT *P. REYMOND,* New *York; from* Camp Jackson, Lieuts.
MERRILL N. *FOOTE,* WILLIAM *K. PUDNEY,* Brooklyn; FRANK
L. MELENEY, New York; from Camp Lee, Lieut. BERNARD McD:
KRUG, Warwick; from Camp MacArthur, *Lieut.* CHARLES T.
OLCOTT, New *York;* from Camp *Meade, Capts.* FREDERICK W.
BANCROFT, MARK H. WARD, New York; Capt. *WALTER* W.
MOTT, White *Plains;* from Camp *Pike,* Lieut. WILLIAM E. CAR-
ROLL, New York; *from Camp* Sherman, Lieut. JAMES F. TRIMBLE,
New York; from Camp Upton; Lieut. FREDERICK *CHRISTOPHER,*
New York; from Camp Wadsworth, Lieuts. JAMES C. SHARP, Brook-
lyn; DIXON L. AUSTIN, KIRBY *DWIGHT, New* York; from New-
port News, Capt. MORRIS R. BRADNER, Warwick; from Williams-
bridge, Lieuts. THEODORE B. REED, WILLIAM *B. RYAN,* Jr.,
New York.
To Camp *Dodge,* Des *Moines,* Ia., base hospital, from Mayo Clinic,
Lieut. WM. P. SWEENY, *Saratoga.*
To Camp Jackson, Columbia, S. C., for duty, Lieuts. PAUL T.
HARPER, Albany; CHARLES M. ANDERSON, Brooklyn; CARL
TOMPKINS, Buffalo; JOHN *RECCA, New* York.
To Camp Lee, Petersburg, Va., for duty, *from* Army Medical School,
Lieuts. EDWIN PYLE, *New York;* HAROLD F. MORRISON, Tuxedo
Park; from Fort McPherson, Lieut. JOHN C. HOLZBERGER, Jr.,
Brooklyn.
To Camp Meade, Annapolis Junction, Md., base *hospital,* Capt.
WILLIAM C. BUNTIN, New York; from Fort McHenry, Lieut.
ADOLPH S. KRAMER, Brooklyn; from Newport *News,* Major
EDWARD W. PINKHAM, New York.

To Camp Sevier, Greenville, S. C., for duty, from Army Medical School, Lieuts. REVERDY VAN W. ESTILL, CHARLES VEJVODA, New York. With *the* board *examining* the troops for cardiovascular diseases, Lieut. HENRY C. THACHER, New York.

To Camp Shelby, Hattiesburg, Miss., with the board examining the troops for cardiovascular diseases, from Camp Zachary Taylor, Capt. ROBERT L. LEVY, New York.

To Camp Upton, L. I., N. Y., for duty, Lieuts. BRUCE L. JONES, Long Island, SAMUEL ALTMAN, *New York;* from Army Medical School, Lieut. NATHANIEL CROST, New York.

To Fort D. A. Russell, Wyo., for duty, *from* Fort Logan, Capt. NOAH F. NORMAN, Watkins.

To Fort Oglethorpe for instruction, Lieuts. JULIUS KAUFMAN, Brooklyn; MORRIS H. NEWTON, Ilion; GERALD B. THAXTON, *New York;* from Hoboken, Capt. HAROLD L. HUNT, *New York.*

To Fort Riley, evacuation hospital, from Camp Gordon, Major CURTENIUS GILLETTE, New *York.*

To Fort Sam Houston, Tex., as *assistant to the* camp *surgeon, from* Camp Baker, Major JOHN T. SPRAGUE, Staten Island. As *orthopedic* surgeon, from Fort Oglethorpe, Capt. JAMES C. DAVIS, Rochcester.

To Fort Slocum, N. Y., for duty, from Fort *Oglethorpe, Capt.* FRANCIS B. TRUDEAU, Saranac Lake.

To [illegible] se hospital, from Scott Field, Lieut. WARREN P. I[illegible] York.

To [illegible] *Islands,* Philippine Department, from Fort Cass[illegible] FRANKLIN, New York.

To New York City, Bellevue Hospital, for instruction, and on completion *to his proper station,* from Camp Devens, Lieut. LEWIS F. COLE, Waterville.

To report by wire to the commanding general, Eastern *Department,* for assignment to duty, Capt. FENTON B. TURCK, New York.

To Rockefeller Institute for instruction in laboratory work and on completion *to Army Medical School,* for duty, Lieut. FREDERICK W. PALMER, Buffalo. For instruction in the treatment of infected wounds, and on completion *to Camp Wheeler,* Macon, Ga., base hospital, Lieut. LOUIS S. KELLEY, Newark.

To Williamsbridge, N. Y., for temporary duty, *from Camp Upton,* Capt. GERHARD H. COOKS, New York.

The following orders have been revoked: *To Camp Hancock,* Augusta, Ga., as assistant to camp surgeon, from Camp Mills, Major ISAAC W. BREWER, Geneva. *To Camp Lee,* Petersburg, Va., *for duty,* Capt. NELSON W. JANNEY, *New York. To Philadelphia, Pa.,* University Hospital, for instruction, and on completion *to Camp Greene,* Charlotte, N. C., base hospital, Capt. GEORGE W. CONTERNO, New York. *To Waynesville, N. C.,* for duty, *from* Camp Wadsworth, Lieut. ALBERT A. MENDEZ, Brooklyn.

North Carolina

To Camp McClellan, Anniston, *Ala.,* base hospital, from *Fort* Oglethorpe, Lieut. JAMES W. DAVIS, Statesville.

To Hoboken, N. J., for duty, Lieut. MILES T. LONG, Newland.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to his proper station,* from Camp Jackson, Lieut. CHARLES E. LYDAY, Albermarle.

To Rockefeller Institute for instruction in laboratory work, from Camp Greene, Capt. JOSEPH J. WAY, Waynesville.

The following order has been revoked: *To Fort Oglethorpe* for instruction, Lieut. ARTHUR E. GOUGE, Bakersville.

Ohio

To Camp A. A. Humphreys, Accotink, Va., for duty, from Army Medical School, Lieut. BRADNER E. GORHAM, Kent.

To Camp Beauregard, Alexandria, La., with the board examining the troops for cardiovascular diseases, Lieut. CLYDE H. CHASE, North Baltimore.

To Camp Grant, Rockford, Ill., base hospital, from Columbus Barracks, Capt. EDMUND R. BRUSH, Zanesville.

To Camp Holabird, Baltimore, Md., for duty, from Camp Wadsworth, Lieut. ULYSSES M. BACHMAN, Cleveland.

To Camp Jackson, Columbia, S. C., for duty, Lieut. PAUL H. KREBS, Cleveland.

To Camp Lee, Petersburg, Va., for duty, from Fort McPerson, Lieut. JOHN H. FRENCH, Jeffersonville.

To Camp Sherman, Chillicothe, Ohio, for duty, from *Fort Oglethorpe,* Lieut. HERMAN SHUBE, Cleveland.

To Camp Upton, L. I., N. Y., base hospital, from Army Medical School, Lieut. EDWARD C. COLDCAMP, Ironton. For duty, Lieuts. CARROLL W. DE. COURCY, Cincinnati; JOHN SLIVKA, Cleveland; from Camp Sevier, Lieuts. JESSE L. THOMPSON, Bristolville; JOSEPH B. McHENRY, Hanoverton.

To Hoboken, N. J., for duty, from Camp Devens, Lieut. THOMAS McELROY, Mingo Junction; from Camp McClellan, Lieut. *ROY F.* JOLLEY, Richwood; from Camp Wheeler, Lieut. WILLIAM N. SHAPIRO, Toledo.

To Manila, Philippine Islands, Philippine Department, for duty, Capt. *OLIVER H. PINNEY, Cincinnati.*

To New York City, Bellevue Hospital, for instruction, and on completion *to his proper station,* from Camp Devens, Capt. *GEORGE P.* TYLER, Jr., Ripley; Lieut. FRANK W. PILLIOD, Toledo.

The *following* order has been revoked: *To Chicago, Ill.,* for orthopedic instruction, from Fort Riley, Lieut. RAY B. BOWEN, Toledo.

Oklahoma

To Camp Doniphan, Fort Sill, Okla., for duty, from Camp Mills, Lieut. HARRY F. VANDIVER, Lahoma.

To Camp Sheridan, Montgomery, Ala., for duty, Lieut. ROBERT L. *MITCHELL, Vinita.*

To Camp Wadsworth, Spartanburg, S. C., with the board examining the command for nervous and mental diseases, *from Houston, Lieut.* ROY K. GODDARD, *Mounds.*

To Fort Sam Houston, Tex., for duty, and on *completion to his proper station,* from Camp Bowie, Lieut. WILLIS K. *WEST,* Oklahoma *City.*

To Manila, Philippine Islands, Philippine Department, for duty, *from* Fort Riley, Lieut. REUBEN W. WILLIAMS, Anadarko.

Oregon

To Camp Lee, Petersburg, Va., for duty, from Army *Medical School,* Lieut. WENDALL J. PHILLIPS, Corvallis.

To Camp Sevier, Greenville, S. C., for duty, *from* Army Medical School, Lieuts. ALFRED E. KINNEY, Astoria; *JOSEPH R.* BARK, Sheridan.

To Manila, Philippine Islands, Philippine Department, for duty, Lieut. CHARLES E. BATES, Salem.

To San Francisco, Calif., Letterman General Hospital, for duty, Capt. RICHARD H. WELLINGTON, Portland.

To Talmage, Calif., Mendocino State Hospital, for instruction, from Vancouver Barracks, Lieuts. KENNETH W. KINNEY, Astoria; CLARENCE U. SNIDER, Portland.

The following order has been revoked: *To Fort Riley* for instruction, Capt. T. HOMER COFFEN, Portland.

Pennsylvania

To Camp Crane, Allentown, Pa., base hospital, from Camp Meade, Lieut. ANDREW I. ROSENBERGER, Meadville. For duty, from McHenry, Lieuts. MARSHALL C. RUMBAUGH, Dorranceton; CHARLES A. PRYOR, Philadelphia.

To Camp Dix, Wrightstown, N. J., base hospital, from Newport News, Lieut. WM. WEISS, Philadelphia.

To Camp Dodge, Des Moines, Ia., with the board examining the troops for cardiovascular diseases, Capt. LAWTON M. HARTMAN, Jr., York.

To Camp Jackson, Columbia, S. C., for duty, Lieuts. FRANK E. FREEMAN, Philadelphia; JOSEPH A. BAIRD, Pittsburgh.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort McPherson, Lieut. WALTER M. BORTZ, Greensberg.

To Camp Lee, Petersburg, Va., for duty, from Army Medical School, Lieuts. HENRY A. LAYE, Galeton; JACOB E. MARKS, Philadelphia; DAVID M. SHOEMAKER, Waynesboro; from Fort McPherson, Lieuts. ABE A. DATTNER, Kingston; FRANCIS C. O'MALLEY, Pittston.

To Camp Sevier, Greenville, S. C., for duty, from Army Medical School, Lieut. FRANK A. TRIPPE, Erie.

To Camp Shelby, Hattiesburg, Miss., with the board examining the troops for cardiovascular diseases, from Camp Zachary Taylor, Lieut. CHARLES W. McCLURE, Bethlehem.

To Camp Upton, L. I., N. Y., for duty, Lieut. CLARENCE H. MILLER, Media.

To Cape May, N. J., for duty, from Camp Meade, Lieut. CLARENCE A. PATTEN, Philadelphia.

To Fort McPherson, Ga., for temporary duty, from Camp Sevier, Lieut. CHARLES E. G. SHANNON, Philadelphia.

To Fort Oglethorpe [illegible] BENJAMIN F. ROYER, [illegible] negie; JOHN J. WOOL- [illegible] Myerstown. War Prison [illegible] Lieut. CHARLES E. [illegible]

[illegible] or duty, from Camp Devens, Lieut. JAMES A. [illegible]

[illegible] *Va.,* for duty, *from* Army Medical School, [illegible] HADWICK, Smethport.

To New York City, Neurological Institute, for instruction, from Camp Dix, Lieut. JAMES E. DWYER, Polk.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to his proper station,* from Camp Jackson, Lieuts. AUGUSTINE J. MULLIGAN, Mt. Alto; HARRY CHERASHORE, Philadelphia.

To Pittsburgh, Pa., as commanding officer of infirmary, from Camp Lee, Major EWING W. DAY, Pittsburgh.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Fort Oglethorpe for temporary duty, from Washington, D. C., Major JOHN S. RODMAN, Philadelphia. For instruction in bacteriology, and on completion to Army Medical School for duty, from Fort Oglethorpe, Lieuts. JOHN D. DONNELLY, Philadelphia; GUY S. VOGAN, Sandy Lake. For instruction in laboratory work, and on completion *to his proper station,* from Fort Oglethorpe, Lieut. OTHMAR P. BARTHMAIER, Philadelphia.

To Saltville, Va., for duty, from Fort Slocum, Capt. CHARLES H. CLOUD, Philadelphia.

The following order has been revoked: *To Fort Oglethorpe,* for instruction, Lieut. HORACE J. WILLIAMS, Philadelphia.

Rhode Island

To Camp Sevier, Greenville, S. C., for duty, from Army Medical School, Lieut. THOMAS C. WYMAN, Providence.

To Rockefeller Institute, for instruction in laboratory work, and on completion to Army Medical School, for duty, Lieut. JOHN F. KENNEY, Pawtucket.

South Carolina

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to his proper station,* from Camp Jackson, Lieut. CHARLES W. GENTRY, Greenville.

South Dakota

To Camp A. A. Humphreys, Accotink, Va., for duty, from Army Medical School, Lieut. WALTER C. MOODIE, Elk Point.

To Manila, Philippine Islands, Philippine Department, for duty, from Camp Lewis, Lieut. FRANK C. SMITH, Yankton.

Tennessee

To Camp Beauregard, Alexandria, La., as member of a board examining the command for tuberculosis, from Camp Logan, Lieut. RICHARD M. LITTLE, Martin.

To Camp Dodge, Des Moines, Ia., base hospital, Lieut. EDWARD C. MATTHEWS Trenton.

To Camp Lee, Petersburg, Va., for duty, from Army Medical School, Lieuts. MARK M. JETTON, JOSEPH J. LIGON, Memphis.

To Camp Sevier, Greenville, S. C., for duty, from Fort Oglethorpe, Major EUGENE R. HOCHSTETTER, Jr., Chattanooga; from Army Medical School, MILTON C. WIGGINS, Paris.

To resume his duties as Medical Aide to the Governor of Tennessee, from the Surgeon-General's Office, Major WILLIAM D. HAGGARD, Nashville.

To Rockefeller Institute for instruction in laboratory work, Lieut. JOHN F. BINKLEY, Nashville.

Texas

To Camp A. A. Humphreys, Accotink, Va., for duty, from Army Medical School, Lieuts. WILLIAM O. PADGETT, Graham; WILLIAM K. LOGSDON, Marlin.

To Camp Crane, Allentown, Pa., for duty, from Camp Shelby, Lieut. CHARLES H. WARREN, Gainesville.

To Camp Sheridan, Montgomery, Ala., with the board examining the command for nervous and mental diseases, from Fort McPherson, Lieut. CHARLES W. STEVENSON, Lorraine.

To Chicago, Ill., Northwestern University School of Medicine, for instruction, from Fort Riley, Lieut. JOHN F. CRAWFORD, Tolar. Presbyterian Hospital, for instruction, and on completion *to Camp Dodge,* Des Moines, Ia., base hospital, from Fort Riley, Lieut. JAMES H. HAPPEL, Cleburne.

To Fort Oglethorpe for instruction, Capt. HOWARD R. DUDGEON, Waco.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieut. JEFFREY C. MICHAEL, Houston.

To report by wire to the commanding general, Southern Department, for assignment to duty, Lieut. JAMES R. DICKSON, Marshall; from Camp Baker, Lieut. ALBERT A. JACKSON, Mexia.

Utah

To Hoboken, N. J., evacuation hospital, from Camp Wheeler, Lieut. JOHN O. COOK, Sunnyside.

Vermont

To Camp Crane, Allentown, Pa., for duty, from Camp Upton, Major WILLIAM STICKNEY, Rutland.

To Camp Jackson, Columbia, S. C., for duty, Lieut. HUGH H. HANRAHAN, Rutland.

To Camp MacArthur, Waco, Tex., as sanitary inspector, from Plattsburg Barracks, Major EDWARD A. TOBIN, North Bennington.

To Camp McClellan, Anniston, Ala., base hospital, from Williamsbridge, Lieut. RAY B. THOMAS, Enosburg.

Virginia

To Camp Custer, Battle Creek, Mich., as orthopedic surgeon, from Fort Oglethorpe, Lieut. ARTHUR HOOKS, Blackstone.

To Camp Lee, Petersburg, Va., for duty, from Fort McPherson, Lieut. LANDON E. STUBBS, Gloucester.

To Camp Sevier, Greenville, S. C., base hospital, from Camp Meade, Capt. IRA HURST, Parksley.

To Camp Sheridan, Montgomery, Ala., as assistant to camp surgeon, from West Point, Major THOMAS R. MARSHALL, Ware Neck. Base hospital, Lieut. A. NULL OSBORNE, Clinch. For duty, Lieut. BOOKER LEE, Kents Store.

To Camp Sherman, Chillicothe, Ohio, as orthopedic surgeon, from Fort Oglethorpe, Lieut. WILLIAM L. POWELL, Roanoke.

To Rockefeller Institute for instruction in bacteriology and on completion *to Army Medical School* for duty, Lieut. MARION S. FITCHETT, Cape Charles.

Washington

To Camp A. A. Humphreys, Accotink, Va., for duty, from Army Medical School, Lieut. JOHN A. BOWLES, Black Diamond.

To Camp Lewis, American Lake, Wash., base hospital, Capt. HENRY H. SLATER, Deer Park.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Fort Riley, Lieut. JACOB S. SMITH, Bellingham.

West Virginia

To Camp McClellan, Anniston, Ala., base hospital, Capt. WAITMAN W. ORR, Bloomfield.

To Camp Sheridan, Montgomery, Ala., for duty, Lieut. JOHN E. CORKREAN, Cassaway.

To New York City, Bellevue Hospital, for instruction, and on completion *to his proper station,* from Camp Devens, Lieut. MILTON D. FLANARY, Charlestown.

Wisconsin

To Camp Lee, Petersburg, Va., for duty, from Army Medical School, Lieut. IRA R. SISK, Madison.

To Fort Oglethorpe for instruction, from Camp Pike, Lieut. WILLIAM W. GILLESPIE, Milwaukee.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Capt. FRANK E. DARLING, Milwaukee.

Wyoming

To Charleston, S. C., for duty, from Army Medical School, Lieut. EDWARD T. GAULE, Moorcroft.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest; such as relate to society activities, new hospitals, education, public health, etc.)

FLORIDA

Antituberculosis Association Organized.—The Duval County Antituberculosis Association was organized at Jacksonville, May 4. Drs. William W. MacDonell, Robert H. McGinnis, Frederick J. Waas, James V. Freeman, Noble A. Upchurch, Mark B. Herlong, Joseph Y. Porter, Louis Stinson and Paul C. Perry were elected the board of directors.

Antituberculosis Activities.—At the annual meeting of the Florida Antituberculosis Association held recently in Jacksonville, a committee was appointed to formulate a state-wide policy. This includes the promotion of the organization and the maintenance of local tuberculosis associations and committees; the promotion of local public health nursing movements; local campaigns for instruction in county tuberculosis sanatoriums; public health instructions in the public schools through the "modern health crusaders"; the informing and educating of public opinion with reference to health problems, and the proper financing of this work by the use of Christmas seals and membership fees.

ILLINOIS

Held for Violation of Espionage Act.—Dr. Arthur G. Schroeder, Chicago, was arrested, May 22, on a federal warrant charged with violating the espionage act by encouraging youths of military age to evade the selective draft. He was released on bonds of $2,000.

State Society Meeting.—At the sixty-sixth annual meeting of the Illinois State Medical Society, held in Springfield, May 21 to 23, the following officers were elected: president, Dr. Edward W. Fiegenbaum, Edwardsville; president elect, Dr. J. Warren Vander Slice, Chicago; vice presidents, Drs. Harry C. Blankmeyer, Springfield, and Clara P. Seippel, Chicago; secretary, Dr. Wilbur H. Gilmore, Mount Vernon (reelected), and treasurer, Dr. A. J. Markley, Belvidere (reelected).

IOWA

Public Health Service Man Made Health Officer.—Permission has been received from the Surgeon-General of the U. S. P. H. S., to allow Dr. William C. Witte, U. S. P. H. S., to act temporarily as health officer of Des Moines until a successor to Dr. Harley L. Sayler can be appointed.

State Medical Society.—At the sixty-seventh annual meeting of the Iowa State Medical Society held in Fort Dodge, May 8 to 10, Des Moines was chosen as the place of meeting for 1919, and a war committee consisting of Drs. William W. Pearson, Des Moines; Lee W. Dean, Iowa City, and Tom B. Throckmorton, Des Moines, were appointed to coordinate the work of the medical profession. The following officers were elected: president, Dr. William L. Allen, Davenport; vice presidents, Drs. William A. Rohlf, Waverly, and Evan S. Evans, Grinnell; secretary, Dr. Tom B. Throckmorton, Des Moines (reelected); treasurer, Dr. Thomas F. Duhigg (reelected), and editor, Dr. David S. Fairchild, Clinton.

LOUISIANA

Personal.—Dr. Henry W. E. Walther has been appointed junior associate in the surgical department, urologic division of the Touro Infirmary, New Orleans.

Work of State Health Board.—The fourth biennial report of the state board of health just issued places the death rate during the biennium at 12.5 per thousand. The report calls attention to the danger from venereal disease and urges the extension of laboratory facilities for a more thorough and general examination of water and milk, and the biologic specimens submitted by physicians, and preparation and free distribution of the antityphoid vaccine. It asks an appropriation of $932,266 and an additional $50,000 for the purpose of establishing clinical and municipal hospitals in municipilities.

To Give State Board Control of Drugs.—Dr. Oscar Dowling, Shreveport, president of the Louisiana State Board of Health, and Dr. Charles A. Rosewater, chief of the narcotic clinic of Newark, N. J., who has recently made a survey of Louisiana, prepared a bill to be submitted by Senator Brown, identical with the bill recently passed in New York state, which makes the narcotic problem a health problem and places the traffic under the control of the state board of health; considers the drug addict as a sick person; encourages physicians to treat such persons; shields the addict from exploitation by incompetent and unscrupulous persons, and makes the unlawful possession of narcotic drugs and hypodermic syringes a crime.

MARYLAND

Site Chosen.—A site on the Severn s been selected for a camp for con- States General Hospital No. 2, at of Lieut.-Col. Harry S. Purnell, fficer at the hospital at Fort amed "Camp Purnell." It will onths only.

sociation.—The anniversary edical Association was held, at the Hotel Rennert, Baltimore. Dr. J. Percy Wade, of the association, presided. The other officers of zation are Drs. Samuel J. Fort, secretary, and ndry, treasurer, both of Catonsville. Lieut.-Col. rnell, commanding officer at the U. S. Army tal No. 2, Fort McHenry, was present as a ociation.

Personal.—A feature of the twelfth annual commencement of the training school for nurses at the Sheppard and Enoch Pratt Hospital, Towson, held May 22, at the institution, was the presentation to the hospital of a portrait of Dr. Edward N. Brush, physician-in-chief and superintendent. The presentation was made by Dr. William Rush Dunton, Jr., senior assistant physician, and the portrait was accepted on behalf of the hospital by Dr. Charles H. Riley, president of the board of trustees.——By the will of the late Dr. Henry M. Wilson, Baltimore, his medical books were given to the Medical and Chirurgical Faculty of Maryland.

New Quarantine Regulations.—The health department has announced that it is no longer necessary to send all smallpox patients to quarantine for care and treatment, as in the past. Those in a position to be taken care of at their homes will be permitted to remain under strict quarantine regulations and the daily surveillance of health officials. Health Commissioner Blake made the announcement as a result of a case of smallpox in a large apartment house in northwest Baltimore. The patient was quarantined in his rooms and a detail of physicians vaccinated all persons who had come in contact with him as well as others living in the building.

MICHIGAN

Service Flag Unfurled.—A service flag displaying 126 stars was unfurled at the meeting of the Wayne County Medical Society, April 8.

License Revoked.—At a special meeting of the Michigan State Board of Registration in Medicine held Jan. 23, 1918, the license of Dr. Walter Moffat, Grand Rapids, was revoked on the ground that he had been convicted in the superior court of "procuring, aiding or abetting in procuring a criminal abortion."

State Society Meeting.—At the fifty-third annual meeting of the Michigan State Medical Society held in Battle Creek, May 7, 8 and 9, under the presidency of Dr. Andrew P. Biddle, Detroit, the following officers were elected: president, Dr. Arthur M. Hume, Owosso; vice presidents, Drs. William S. Shipp, Battle Creek; Carroll E. Miller, Cadillac; John L. Chester, Emmett, and Frank W. Garber, Muskegon. On the last day, the session of the society was held at Camp Custer, where a divisional review was given in their honor.

Personal.—Dr. Christopher G. Parnell, for three years head of the health department of Jackson, has resigned to accept the superintendency of the University Hospital, Ann Arbor. ——Dr. Henry V. Tutton, Benton Harbor, was given a gold watch, chain and fob, from his boys of the Second Battalion of the Naval Militia, in appreciation of services rendered while a member of the examining board for the Navy.—— Dr. Karl Greiner, Sparta, charged with writing a seditious letter to the *Medical World*, was released from custody, May 6, as it was shown that the article was written before June 15, 1917, when the new espionage law came into effect.

MINNESOTA

Hospital Burns.—The hospital of the Oliver Iron Mining Company at [illegible] Lake was destroyed by fire, May 16; no casualties re[illegible].

Southern Minnesota Physicians to Meet.—The midsummer convention of the Southern Minnesota Medical Association will be held at Winona, June 24 and 25.

Indicted for Sedition.—The district grand jury is said to have returned an indictment, May 11, against Dr. Arthur Bremken, Pine River, charged with sedition.

Relief Society Formed.—A special committee of the Hennepin County Medical Society met in Minneapolis, May 16, to consider how the society may be of service to the families of the sixty members who have entered the Army or Navy service.

Physician Wins Verdict.—Dr. Francis E. Murphy, Aitkin, who brought suit against Ambrose Casey and Thomas Kileen for assault, was given a verdict and $11,000 damages by the jury, May 18. The plaintiff was health officer of Aitkin and was alleged to have been assaulted while placing a smallpox sign.

MISSOURI

Flag Donated to Hospital.—A large American flag donated to the State Hospital No. 4, Farmington, by Dr. William F. Kuhn, Kansas City, a former superintendent, waves daily in front of the administration building of the hospital by order of the present superintendent, Dr. Jesse L. Eaton.

Expects to Reopen Leeds Sanatorium.—Dr. Elmer J. Billick, the newly appointed health commissioner of Kansas City, assumed formal charge of his office, May 13. After an investigation of the situation, he expressed his opinion that the Leeds Sanatorium which has been in use for smallpox patients, will soon be reopened as a municipal tuberculosis hospital.

Personal.—The Shelby County Medical Society gave a banquet, May 23, at Shelbyville in honor of Dr. William Corson, who has just completed fifty years of active practice in his profession.——Dr. Hasbrouch De Lamater has been reappointed city health officer of St. Joseph.——Dr. Eugene L. Opie, St. Louis, has returned from active service in a British hospital in northern France.

A Memorial to Dr. Fitzsimon.—In memory of Lieut. William T. Fitzsimon, Kansas City, who was killed last September, when the German airplanes bombarded the Harvard University Hospital in France, the park commissioners of Kansas City have decided to erect a memorial in the form of a public drinking fountain which will bear an inscription relating the details of Dr. Fitzsimon's work and death.

Meeting of the Southeastern Association.—The southeast Missouri Medical Association held its forty-second annual meeting in Poplar Bluff, May 10, and elected the following officers: president, Dr. Alfred R. Rowe, Poplar Bluff, vice president, Dr. John H. Yount, Charleston; treasurer, Dr. William R. Goodykoontz, Caledonia; corresponding secretary, Dr. William S. Hutton, Fornfelt, and recording secretary, Dr. Will K. Statler, Oak Ridge. Charleston was selected as the next place of meeting.

State Association Meeting.—The Missouri State Medical Association held its sixty-first annual meeting in Jefferson City, May 6 to 8, and elected the following officers: president, Dr. Milton P. Overholser, Harrisonville; vice presidents, Drs. Jefferson D. Brummall, Salisbury, John C. Matthews, Springfield, T. Guy Hetherlin, Louisiana, Scott P. Child, Kansas City, and John Isbell, Washington; secretary, Dr. Edwin J. Goodwin, St. Louis (reelected); treasurer, Dr. J. Franklin Welch, Salisbury; delegates to the American Medical Association, Drs. Arthur R. McComas, Sturgeon, Franklin E. Murphy, Kansas City, and Wilson J. Ferguson, Sedalia.

MONTANA

Hospital Contract Awarded.—The contract for the construction of the Sisters Hospital, Billings, has been awarded to a Helena firm for $266,000.

Resigns After Long Service.—After thirty-one years of continuous service as physician in Fort Peck Indian Reservation, Dr. James L. Atkinson, Poplar, announces that he will resign, about July 1, and thereafter devote himself to private practice.

Society Will Protect Physicians in Military Service.—A special committee selected from members of the Montana Medical Association met in Helena, May 7, and discussed plans, whereby all districts of Montana will be sure of not being totally deprived of physicians during the time of the war.

State Nurses.—The Montana State Nurses Association met at Bozeman, April 25. Among the speakers present were Dr. James F. Blair, Bozeman, and Dr. William F. Cogswell, Helena, secretary of the state board of health. Letters were read from nurses at the front in France. Infantile paralysis was one of the topics discussed.

NEBRASKA

Hospital Notes.—Almost $13,000 has already been subscribed for the new hospital at Fall City.——Bids have been asked for the erection of a new Lutheran Hospital at Beatrice, which is to be erected north of the present building at a cost of about $125,000.

Personal.—Dr. Ernest T. Manning has been appointed health commissioner of Omaha, succeeding Dr. Ralph W. Connell, resigned.——Dr. Louis S. B. Robinson, for two years superintendent of the state tuberculosis hospital at Carney, has sent in his resignation, to take effect, June 1.——Dr. Olga F. Stastny, Omaha, has been accepted for foreign service and been notified to prepare to sail for Europe.——Dr. Artemas I. MacKinnon, Lincoln, has been appointed chief surgeon of the Orthopedic Hospital, Lincoln, succeeding Dr. Edwin C. Henry, Omaha, released to enter military service.

New State Officers.—At the fiftieth annual meeting of the Nebraska State Medical Association held in Omaha, May 6 to 8, under the presidency of Dr. Charles L. Mullins, Broken Bow, the following officers were elected: president, Col. John M. Banister, M. C., U. S. Army (retired), Omaha; vice presidents, Drs. Fred W. Buckley, Beatrice, and Artemas I. MacKinnon, Lincoln; secretary-treasurer, Dr. Joseph M. Aikin, Omaha (reelected); delegate to the American Medical Association, Dr. Joseph M. Aikin, Omaha; chairman of council, Dr. Henry J. Lehnhoff, Lincoln; secretary of council, Dr. Anders P. Overgaard, Omaha. The association will meet next year in Lincoln.

NEW HAMPSHIRE

Medical Referee Appointed.—Dr. Walter A. Bartlett, Manchester, has been appointed medical referee of the Manchester district of Hillsborough County, succeeding Dr. Maurice Watson, Manchester.

New State Officers.—At the annual meeting of the New Hampshire Medical Society held in Concord, May 15 and 16, under the presidency of Dr. George C. Wilkins, Manchester, the following officers were elected: president, Dr. Charles P. Bancroft, Concord; vice president, Dr. Augustus W. Shea, Nashua; trustee, Dr. Herbert L. Smith, Nashua; councilors, Drs. George H. Saltmarsh, Lakeport, and Frederick von Tobel, Lebanon. The orations in medicine and surgery were delivered by Drs. James J. Walsh, New York City, and John T. Bottomley, Boston.

NEW YORK

Jenkins Society Election.—The annual meeting of the Jenkins Medical Society was held at St. Joseph's Hospital, Yonkers, May 9. Dr. Edward A. Spilsbury, Yonkers, was elected president; Dr. Frank A. M. Bryant, Mount Vernon, vice president, and Dr. George B. Stanwix, Yonkers, secretary.

Tuberculosis Hospital.—Three additional counties have started work on tuberculosis hospitals under the county hospital law. The Broome County institution will be located at Chenango bridge near Binghampton, the Rockland County Hospital in the neighborhood of Summit Park near New City, and the third hospital in Nassau County near Farmingdale.

State Society Officers.—The Medical Society of the State of New York held its one hundred and twelfth annual meeting in Albany, May 20 to 22, and elected the following officers: president, Dr. Thomas H. Halsted, Syracuse; vice presidents, Drs. James F. Rooney, Albany, and Marcus B. Heyman, Suffolk; secretary, Dr. Floyd M. Crandall, New York City, and treasurer, Dr. Frank van Fleet, New York City.

Medical Women Elect Officers.—At the annual meeting of the Women's Medical Society of New York State, held in Albany, May 21, the following officers were elected: Dr. Elizabeth Burr, Thelberg, Poughkeepsie, president; Drs. Edith R. Hatch, Buffalo, and Florence Staunton, Utica, and Sara J. McNutt, New York City, vice presidents; Dr. Ethel D. Brown, secretary, and Dr. Phoebe M. B. Van Voast, New York City, treasurer.

Public Health Laboratory Association Organized.—The New York State Association of Public Health Laboratories, founded in October, 1916, held its first annual meeting at Albany, May 22. Syracuse was decided on as the place for the next meeting, and the following officers were elected: president, Dr. Warren B. Stone, Schenectady; vice president, Dr. Joseph S. Lawrence, Albany, and secretary, Dr. Howard I. Davenport, Auburn.

Sterilization Unconstitutional.—The law enacted in 1912, creating a state board of examiners with power to sterilize by operation feebleminded criminals and other defectives, has been held to be unconstitutional by Justice Rudd of the supreme court. The board of examiners created under the law examined about 200 persons and listed them as proper subjects for operation, but the attack on the constitutionality of the law has made it a dead letter since its enactment.

Personal.—Dr. Vilas G. Van Ornam has resigned as surgeon to the Semet-Solvay Company, Split Rock, to accept a similar position at a government ammunition plant at Perth Amboy, N. J.——In the city of Buffalo Dr. Douglas P. Arnold has been appointed director of infant welfare, Dr. Hugh J. McGee, medical school examiner; Dr. Nellie E. Kurtz, assistant medical school examiner; Dr. Christiana M. Greene, medical school inspector, and Dr. Albert J. Harris, assistant medical school inspector.——Dr. A. M. Cheny-Spofford has been appointed health officer of the city of Batavia, in the absence of her husband, Dr. Henry M. Spofford, who is in military service.

Medical Legislation.—At the recent session of the legislature, a number of measures of medical interest were enacted. Among them was the Sage-Adler bill creating a new state commission on the feebleminded. The commission will consist of the secretary of the state board of charities, the physical supervisor of the state charities, and a medical chairman, all of whom are to be appointed. There were also enacted a law extending the duties of the hospital development commission, and providing for the reclassification and redistribution of the inmates of the various state institutions with a view to segregation, and for the establishment of separate wards for the feebleminded; a law providing that New York City give the magistrates of the inferior courts power to remand feebleminded female delinquents for determination of their mental condition; also, measures appropriating about $3,000,000 for new construction work at institutions for the insane and feebleminded. Two new state hospitals are to be built, one at Creedmoor on the outskirts of Brooklyn, and a psychopathic hospital in New York City. Appropriations were made for all these institutions and for the site of another new state hospital in the metropolitan district, to take the place of the abandoned Mohansic institution.

New York City

Prenatal Clinic Planned.—A new prenatal clinic has been opened by the Bowling Green Neighborhood Association at its headquarters, 45 West Street, Manhattan. This is an extension of prenatal work begun at this place in 1914, by the New York Milk Committee and turned over last year to the neighborhood association.

Dairy Exhibit to Promote Use of Milk.—The Dairymen's League, during the week of May 20, conducted an exhibit in the Grand Central Palace as a part of an educational campaign to further the use of milk as a food and thus to encourage the preservation of the herds and the dairy industry in the state. A number of food experts delivered addresses and gave demonstrations designed to show the value of milk as a food.

New Home for Bronx Hospital and Dispensary.—The board of directors of the Bronx Hospital and Dispensary have purchased the property on the southwest corner of Fulton Avenue and One Hundred and Sixty-Ninth Street, consisting of three buildings and twelve city lots. Alterations will be started immediately to make these buildings suitable for hospital and dispensary purposes. When they are completed, there will be accommodations for 100 patients in the hospital.

Suits Against Physicians.—The suit for $25,000 brought by Dr. Edward W. Piper, Brooklyn, against the Brooklyn Rapid Transit Company for alleged false arrest, is said to have been decided by a jury in favor of the company, April 24.——Dr. Philip G. Becker, charged with conspiracy to violate the selective draft law by furnishing the drafted men with drugs which would cause them to be rejected, was discharged because of apparent physical unfitness. It is said that he was found not guilty, May 16.

Offer to Erect Big War Hospital.—Representatives of the Beth Israel Hospital have made a formal offer to the War and Navy departments to erect a $1,250,000 hospital on the square block bounded by Second Avenue and Livingston Place between Seventeenth and Eighteenth streets. The plans provide for the accommodation of 500 patients. Both the War and the Navy departments have taken the offer under advisement. The funds for the construction of a fifteen-story hospital building are available, and as soon as the offer is accepted, work will be begun. For several years the Beth Israel Hospital Association has intended to erect a new building, and has now hastened the plans so that it may perform a patriotic duty by turning the building over to the government for such a period of time as the latter may wish to use it.

Civil Service Examinations.—The Municipal Civil Service Commission has announced the following examinations:

Medical superintendent, Grades 4 and 5.—Application will be received until June 11. Candidates must be citizens of the United States and residents of New York state, must be licensed to practice medicine in the state of New York, and must have had at least two years' administrative service in a hospital or the equivalent. Their duty will be to assist in large hospitals under the jurisdiction of the state of New York.

Pathologic chemist.—Applicants must be at least 21 years of age, citizens of the United States, residents of New York state, must possess the degree of M.D., Ph.D., or M.S. in chemistry, and must have had at least one year of experience as pathologic chemist in a laboratory of recognized standing. Salary, $2,140.

For particulars concerning examinations, application should be made to the Municipal Civil Service Commission, New York City.

Personal.—Dr. Sophie Rabinoff is going to Palestine with the American Zionists' Medical Unit, to do child welfare work and pediatrics.——Dr. Charles H. Jaeger has been appointed assistant professor of orthopedic surgery in the College of Physicians and Surgeons in the city of New York.——Dr. S. Dana Hubbard has been appointed temporary head of the New York Board of Education, succeeding Dr. Charles F. Bolduan.——In the damage suit of Mrs. Mary Jennie Graham against Dr. Louis Jameson, in which $5,000 damages were asked, the jury, May 13, is said to have awarded Mrs. Graham $1,250.——Dr. Magnus T. Hopper, Brooklyn, has been selected as medical director of the Carson C. Peck Memorial Hospital, now being erected in Brooklyn at an expenditure of more than $240,000. The medical staff of the hospital will be headed by Dr. Bruno W. Bierbauer, and the surgical staff by Dr. William Francis Honan.——Major Eugene Wilson Caldwell is reported to be critically ill from roentgen-ray burns at his home.

Investigation of Nursing Situation.—The public health committee of the New York Academy has just made public the result of a survey of the problems relative to the shortage of nurses. The findings state that it is estimated that in military service, 10 per cent. of the soldiers are constantly sick or wounded. Of an estimated force of 2,000,000 men, 200,000 would be constantly in need of nursing services and this would require about 25,000 nurses. Up to the present time, a few more than 9,000 have been enlisted. The specific recommendations of the committee are for the enlargement of training schools in hospitals for the enrolment of women in full courses rather than to become aids, and for no lowering of nursing standards. Army training schools are discouraged. Accredited civil hospitals in cooperation with the American Red Cross should undertake the training of nurses' aids for gratuitous service only. A further recommendation urges that the employment of nurses by civilian patients be curtailed as much as possible.

OHIO

Hospital Items.—The Orchard Hospital, Marion, owned by Dr. Elmer O. Richardson, was opened, May 15.——The new general hospital, Mansfield, was opened for inspection, May 14.

Trachoma Hospital Wanted.—Members of the Hempstead Academy of Medicine, Portsmouth, are petitioning the state health department to obtain an appropriation in the next legislature to establish a federal and state trachoma hospital in Portsmouth.

Personal.—It is reported that Dr. Frank L. Sargent, Ashtabula, is seriously ill with pneumonia.——Dr. Daniel C. Brennan, Akron, who has been ill with diphtheria, is reported convalescent.——Dr. Robert H. Butler was operated on for appendicitis on board the hospital ship *Mercy,* April 30.——Dr. Edward G. Reinert, Columbus, has been appointed a member of the state board of administration.

Fines and Penalties.—It is reported that Dr. William Steele, Massillon, was charged with the illegal selling of morphin, found guilty, May 16, and fined $25 and costs for this offense, as well as $50 and costs for using the wrong registration number on prescriptions. Also, his license to buy and prescribe narcotics was revoked.——A verdict of $2,600 for alleged negligent treatment of a fractured leg, is said to have been awarded to Louis E. Shepherd, who charged malpractice against Dr. Lewis Baker, Dayton, May 8.

OKLAHOMA

Held for Helping to Evade Draft.—Dr. William E. Nichols, Tulsa, is said to have been placed under arrest, charged with furnishing drafted men with a drug which affected the eyes, and created symptoms which caused the drafted men to fail to pass the physical examination for military service. For this service he is said to have charged from $75 to $150. Dr. Nichols has been held on bonds of $10,000.

State Society Meeting.—The Oklahoma State Medical Association held its twenty-sixth annual meeting in Tulsa, May 14 to 16, under the presidency of Dr. W. Albert Cook, Tulsa. The following officers were elected: president, Dr. Leonard S. Willour, McAlester; president elect, Dr. Lewis J. Moorman, Oklahoma City; vice presidents, Drs. Edward D. James, Miami, and H. Marion Williams, Oklahoma City, and Walter Hardy, Ardmore; delegate to the American Medical Association, Dr. Mahlon A. Kelso, Enid, and Leroy Long, Oklahoma City. Muskogee was selected as the next place of meeting.

PENNSYLVANIA

Philadelphia

Medical Recruiting Office.—A recruiting station for physicians has been opened in the department of health and charities, City Hall, under Lieut. John W. West, medical examiner for the Medical Reserve Corps.

Property Purchased for War Hospital.—The buildings of the divinity school of the Protestant Episcopal Church at Fiftieth Avenue and Woodland Avenue have been sold to the Mercy Hospital, a negro institution, which will occupy the site as a hospital for negro officers and soldiers. The sale involved $120,000, and there are several buildings and 6 acres of ground. The war hospital will be directed by the Crispus Attucks Circle for War Relief, composed of leading negro physicians. The present buildings furnish accommodations for 200 beds, but it is intended ultimately to enlarge the institution to accommodate between 1,500 and 2,000 patients.

TEXAS

Personal.—Dr. Harold L. D. Kirkham has been elected secretary of the South Texas District Medical Association to serve until the annual fall meeting.——Dr. Alfred L. Ridings, Sherman, has been appointed county health officer of Grayson County.

New Society.—The physicians of Goose Creek met recently and organized a local medical society to be affiliated with the Harris County Society and elected Dr. S. P. Russell chairman, Dr. L. P. Dudley vice chairman, and Dr. Edward W. Neal Devers, secretary. The organization was named the Goose Creek Medical Society.

War Service Resolutions Voted Down.—At a special meeting of the Bexar County Medical Society, held in San Antonio, May 11, resolutions were voted down which pledged 5 per cent. of the gross monthly income of every member of the society not in the service, to a fund to be known as the "Bexar County Medical Society War Service Fund."

Public Health Association Meets.—At the annual meeting of the Texas Public Health Association, held recently in Austin, the following officers were elected: president, W. A. Bowen, Arlington; vice president, Drs. Elva A. Wright, Houston, and Beverly T. Young, San Antonio; secretary, Dr. James S. Rollings, Fort Worth, and treasurer, Dr. H. A. Wroe, Houston.

Railway Surgeons Hold Meeting.—The annual meeting of the Texas Railway Surgeons' Association was held in San Antonio, May 13, and the following officers were elected: president, Dr. William L. Brown, El Paso; vice presidents, Drs. William A. Duringer, Fort Worth; Samuel P. Cunningham, San Antonio, and Sam Webb, Dallas; secretary, Dr. William B. Thorning, Houston, and treasurer, Dr. Herschel F. Connally, Waco.

New State Association Officers.—At the fiftieth annual meeting of the State Medical Association of Texas, held in San Antonio, May 14, 15 and 16, Waco was selected as the next place for the annual meeting, and the following officers were elected: president, Dr. Selwyn P. Rice, Marlin; president elect, Dr. Robert W. Knox, Houston; vice presidents, Drs. Hugh L. Moore, Dallas; Herschel F. Connally, Waco, and Louis J. Manhoff, Aransas Pass. The councilors are Drs. Robert B. Homan, El Paso, first district; Joseph E. Dildy, Brownwood, fourth district; Cleve C. Nash, Palestine, eleventh districh (reelected); John F. Bunkley, Seymour, thirteenth district; Andrew B. Small, Dallas, fourteenth district; vice councilor for the fifth district, Dr. Thomas Dorbandt, San Antonio. The delegates to the American Medical Association are Drs. Marvin L. Graves, Galveston, and Ira C. Chase, Fort Worth, and the alternates, Drs. Edward H. Cary, Dallas, and John H. Florence, Houston. Dr. John S. Turner, Dallas, was reelected trustee.

WASHINGTON

Physician Interned.—Dr. John Reitz, Tacoma, is reported to have been interned in Fort Lawton as an alien enemy.

Money for Health Campaign.—The common council of Tacoma has passed an ordinance appropriating $5,000 from the general fund to pay special expenses of the health department.

Tri-State Meeting.—A meeting of the physicians of Washington, Oregon and Idaho will be held in Seattle, July 17 to 19. The Oregon and Idaho state associations will not hold separate meetings this year.

Personal.—Dr. W. Marvin Munsell, Grand View, has been appointed district surgeon of the Union Pacific system, covering that portion of the ground between Kennewick and Yakima.——Major James B. Eagleson, M. R. C., U. S. Army, Seattle, was a guest of honor at the meeting of the state club, Seattle, April 3. Major Eagleson is now on duty at Base Hospital No. 50, Palo Alto, Calif.——Dr. J. H. McDonald, Tacoma, underwent an operation at St. Joseph's Hospital in that city, April 6.——Dr. J. Mason Adams has returned to Seattle invalided after two years of service with the Canadian expeditionary forces in France.

WISCONSIN

Sanitary Department Organized.—Major Daniel S. McArthur, LaCrosse, acting under orders from the adjutant general of the state, has begun the organization of a sanitary department for the Wisconsin State Guard.

Wisconsin Surgeons Hold Meeting.—At the annual meeting of the Wisconsin Surgical Association held in Milwaukee, May 8 and 9, under the presidency of Dr. Horace M. Brown, Milwaukee, the following officers were elected: president, Dr. John F. Pember, Janesville; vice president, Dr. Dennis J. Hayes, Milwaukee; secretary-treasurer, Dr. Daniel Hopkinson, Milwaukee; regent, Dr. Horace M. Brown, Milwaukee, and vice regent, Dr. John van R. Lyman, Eau Claire.

Hospital News.—St. Mary's Hospital, Ladysmith, was open for public inspection, May 30. The building is three stories and basement in height, in the southwest corner of Ladysmith, on an eminence near the river.——The cornerstone for the Ashland General Hospital was laid, May 12, with impressive ceremonies. The principal address was given by Dr. John M. Dodd.——The addition to St. Joseph's Hospital has been completed at a cost of more than $20,000 and is now occupied. The addition is 93 by 37 feet, and it is three stories in height and fireproof.——Dr. Charles S. Hayman and Jonathan C. Betz have purchased an interest in the Brookside Hospital, Boscobel. Dr. Edward H. Spiegelberg retains his interest in the institution.

Personal.—Dr. Charles O. Thienhaus, Milwaukee, who was ordered to be interned during the period of the war, because as an enemy alien he had gone outside the prescribed area, has been taken to Fort Oglethorpe, Ga., for internment.——Dr. Everett W. Maechtle, West Allis, was operated on for appendicitis in a hospital in Milwaukee, May 16.——Dr. Oscar Lotz, secretary of the Milwaukee County Medical Society, was presented with a silver tray, May 14, in appreciation of his services.——Dr. Lawrence H. Prince has resigned as medical supervisor of the public schools in Madison, to become superintendent of the state school for dependent and crippled children at Sparta, where he succeeds Dr. John F. Brown, who has gone to Kankakee, Ill., to accept the presidency of the Re-Use Knitted Gauze Company.——Dr. A. T. Rasmussen, LaCrosse, was operated on recently in Milwaukee for appendicitis.——Dr. Conrad W. Wilkowske, Chippewa Falls, is reported to be ill with pneumonia at Camp Upton, L. I.——Dr. Henry T. Brogan has been appointed health commissioner of Milwaukee.

CANADA

Queen's University Graduates.—Twenty-six medical students were graduated from the medical department of Queen's University, Kingston, Ont., May 22. The medal in medicine was won by Albyn A. Cauley, Lombardy, Ont., and the medal in surgery by Henry C. Connell, B.A., Kingston.

Personal.—Lieut.-Col. F. E. Birdsall, M.D., has taken over the command of the Kingston (Ont.) Military District.——Lieut.-Col. Kenneth D. Panton, Vancouver, B. C., who went to France with one of the earliest Canadian contingents and served in Flanders and Greece, has returned to England, where he has been given the command of the Canadian hospital at Eastbourne.——Lieut.-Col. Alexander J. MacKenzie, Toronto, after prolonged service overseas, has returned home. He has been ordered to Halifax to take over military matters in that region.——Major B. M. Luton, St. Thomas, Ont., a winner of the military cross, returned from overseas recently, and has been appointed commanding officer of the new military hospital at Fredericton, N. B.——Drs. Robert J. McMilland and Andrew D. Moorhead, Toronto, who went overseas about a year ago, are engaged in a military hospital at Havre, France.——It is understood that Lieut.-Col. Harold C. Parsons, Toronto, who went overseas three years ago with the University of Toronto Base Hospital, will soon return to

Canada and become a member of the hospitals inspection committee. Capt. William Goldie, Toronto, has obtained a year's leave of absence from the University of Toronto, and will take Dr. Parsons' place in the hospital at Basingstoke. ——Dr. Alfred Thompson, Dawson, formerly superintendent of the Canadian Hospitals Commission, has again been returned as member of Parliament for the Yukon.——Dr. Frederick W. Luney, London, Ont., of the institute of public health, has been appointed pathologist of the Victoria Hospital in that city. Dr. W. F. Hodgetts has been placed on the active staff of the hospital, replacing Dr. Everett Young, who has gone to the Byron Sanatorium, and Dr. Freel, who has gone overseas.——There is great satisfaction in Canada at the announcement that Dr. Henri S. Béland, M..P., formerly postmaster-general of Canada, has been released as a prisoner of war in Germany. Dr. Beland had just been married to a Belgian woman when war broke out, and entered the Belgian Army Medical Corps. Subsequently, while he was in prison, his wife died, and he was refused attendance at her bedside. Her death was not told him until some days after her interment.——Dr. J. P. McCullough, Belleville, ophthalmic and aural surgeon to the British forces from 1915 to 1917, has opened an office in Toronto.

GENERAL

War Educational Meeting.—The National Education Association will meet this year in Pittsburgh from June 29 to July 6. The program, which has been sent out, shows that the papers and addresses will have a distinct bearing on the war.

Mail for the Expeditionary Forces.—The Postoffice Department authorizes the announcement that the Postmaster-General and the Secretary of War have agreed that mail for the American expeditionary forces in France shall be handled by the War Department.

More Army Nurses Needed.—On account of the urgent need of nurses for the Army and Navy, the American Red Cross will open a campaign, June 10, to recruit 25,000 registered nurses. The requirements for this service are that applicants must be at least 21 years of age, graduates of a recognized school for nurses and must have had at least two years of training in a general hospital. In states where registration is provided for by law, applicants must be registered.

War Hospital Problems.—A conference on war-time hospital problems will be held under the auspices of the war service committee of the American Hospital Association at the New York Academy of Medicine, New York City, June 3, at 10:30 a. m. Dr. Sigismund S. Goldwater is chairman of the committee. The tentative program will include discussions of income and expenditures, medical and surgical supplies, new constructions, labor supplies, medical and nursing service, the care of government patients, federal vocational boards, and the war risk insurance bureau.

FOREIGN

War-Time Economies.—The *Practitioner* reaches us this month with much less than its usual number of pages, but the type used has been reduced in size to correspond, so that it actually contains nearly as much reading matter as before. This has been done to meet the requirements of the government in regard to economy in paper.

Deaths in the Profession Abroad.—Lieut.-Col. **H. Stewart** of Dublin, aged 37, killed in action.——**G. Elliston**, for nineteen years financial secretary and business manager of the British Medical Association, aged 46.——**V. H. Starr**, surgeon in charge of the mission hospital at Peshawar, India, aged 35, was fatally stabbed by a fanatic, March 17.——**J. M. Clarke**, professor of pathology at the University of Bristol, aged 58.——**H. Macnaughton-Jones**, aged 73, professor of obstetrics at the University of Cork until he removed to London in 1883, where he occupied a prominent position in obstetrics and gynecologic work. He was honorary president of several of the international medical congresses of his specialty and president of the British section at the Petrograd international congress. Some of his works, notably those on diseases of women, have passed through many editions.——**E. Mosny**, lecturer on clinical medicine at the University of Paris and an authority on bacteriology and public hygiene, president of the Société de médecine publique et de génie sanitaire, aged 57. With Brouardel and Chantemesse he aided in publishing the Traité d'Hygiène, a twenty volume work.

MEXICO, CENTRAL AND SOUTH AMERICA

English and French in Medical Curriculum in Mexico.—The dean of the medical department of the Universidad Nacional of Mexico has recently inaugurated courses in English and French as part of the medical curriculum.

Personal.—Dr. F. Ocaranza, professor of physiology at the Facultad de Medicina of the Universidad Nacional, Mexico, has been appointed secretary of the Facultad. He is at the same time secretary of the Academia de Medicina.——Dr. D. Orvañanos has been appointed inspector of laboratories in the Facultad de Medicina.——Dr. A. A. da Matta of Manaos, Brazil, was recently elected foreign corresponding member of the Academia. At meeting, Dr. J. C. Urueña presented a case of pityriasis rubra pilaris, the third that has been reported in Mexico, and Dr. E. Landa, a case of abdominal round cell sarcoma with metastasis.——Dr. R. Carrillo has been engaged by the *Universal*, a City of Mexico daily, to examine systematically the health of all its employees and give such treatment as may be needed.

LONDON LETTER

London, May 7, 1918.

The Medical Examination of the Older Recruits

Under the recent military service act, medical boards will be called on to determine the physical fitness of men between the ages of 18 and 50 years, and in a few cases 55. In the case of the older men, between 43 and 50, now brought under medical review for the first time, the application of the accepted standards will require special care, and the following instructions have been issued by the government:

Grade 1. The older men will be placed in Grade 1 if they possess the full normal physical fitness to be expected of their age. Such men must not have any serious physical defect and must not suffer from progressive organic disease. They must be able to endure physical exertion involving a considerable degree of strain, and to undergo gradual physical training in order to fit them for military duty. The physical training for the older men in this grade will be carried out under special medical supervision.

Grade 2. The older men fit for Grade 2 will possess the normal physical fitness of their age. They must not suffer from progressive organic disease, and the physical defects that prevent such men from being placed in the higher grade must not be of such a nature as to diminish seriously their physical activity. They must be able to undergo a considerable degree of physical exertion of a nature not involving severe strain.

Grade 3. In this grade will be placed older men with marked physical disabilities or who show evidence of disease which is not active nor of a progressive character at the time of the examination. Although not fit to undergo military training, they may be called on to perform duty in military establishments under conditions approximating to their home life and surroundings.

Grade 4. In this grade will be placed those older men whose physical disabilities, owing to defects or progressive disease, are of such a nature as to render them totally and permanently unfit for any form of military service. The attention of the boards will, therefore, be especially given to the forms of physical disability which may become evident in the fifth decade, such as cardiovascular defects and emphysema. It is expected, however, that considerable numbers of men of this age will be found fit for military service, especially of the less arduous type.

Subject to military exigencies, the corps to which the War Office proposes to post older men are: (*a*) Combatant service: Home defense infantry, and garrison battalions at home and abroad. Royal field artillery, and royal garrison artillery at home. (*b*) Auxiliary service at home and abroad, such as Royal Army Medical Corps, Army Service Corps, as motor and horse transport, remounts and supplies; Army Ordnance Corps; Army Veterinary Corps; inland water transport and dock; railway troops; roads, and quarries. Such men will also be posted to the air force for duty with the squadrons.

Attack on Hospital Ship by German Submarine

It has now been proved conclusively that the British Hospital Ship *Guildford Castle* was attacked by a German submarine in the Bristol Channel on the afternoon of March 10, struck by a torpedo, and had a narrow escape from being sunk. At the time of the attack, 5:35 p. m., the *Guildford Castle*, which was carrying 438 wounded soldiers, was flying a Red Cross flag of the largest size, her navigating lights were also showing, and the distinctive marks denoting the character of the ship were properly illuminated. No excuse can be put forward that these distinctive marks were in any way obscured by climatic conditions, for the weather was clear, with visibility of about 5 miles, and the ship, standing well out of the water, could be plainly distinguished as a British Red Cross hospital vessel. An official inquiry into the circumstances of the attack shows that two torpedoes were fired. The first passed close to the ship's stern from port to starboard. A minute afterward a second torpedo was fired and struck the ship a heavy, sharp blow on the port side abreast of the mainmast, causing her to vibrate considerably fore and aft. Happily the torpedo did not explode. The discipline on board the ship was excellent. There was no panic, and the patients were conducted to the boats very quickly. On arriving in port the vessel was drydocked, and expert examination of the hull proved that the ship was struck by a torpedo which did not explode. The torpedo apparently rebounded after first striking the vessel, and, returning, bumped along the ship's side until it was finally struck by one of the propellers, as one of the propeller blades was found to be marked and slightly bent. An examination of the marks on the hull of the ship showed that they were not compatible with the vessel's having struck a submarine or the submarine's having come into collision with the ship.

In view of the fact that the Germans sometimes deny that they have attacked hospital ships that have been sunk, the following admission is interesting. April 24, the German official message sent out through the wireless stations attempting to confute Sir Eric Geddes' statement in Parliament on mercantile losses contained this passage: "Lloyd George and Geddes falsify the losses of ships plying in the military service, ignoring so-called naval losses, auxiliary cruisers, guardships, hospital ships, and very probably also troop transports and munition steamers—that is to say, precisely that shipping space which is particularly exposed to and attacked by the U-boats."

Outbreak of Infective Ophthalmoplegia

A considerable number of cases of acute illness marked by ophthalmoplegia and other symptoms suggestive of botulism have occurred in London and in various parts of the country. It may be remembered that the form of food poisoning described in 1895 by van Ermengem under the name botulism (*botulus*, a sausage) were due to eating sausage or fish infected with the *Bacillus botulinus*, an anaerobic organism. The outstanding features of the cases are acute onset of incomplete double third nerve paralysis, with ptosis and diplopia. Pyrexia has been present in the majority of cases and delirium in some. The source of infection is obscure. In some, no food taken by the patients was under suspicion. In others, the condition has followed eating sardines or canned salmon. In the fatal cases, the length of the illness has varied from ten days to six weeks. Pathologic investigation is not yet complete. Sections of the medulla have shown infiltration with lymphocytes and chromatolysis of the cells of the basal nuclei. Thus far the *Bacillus botulinus* has not been identified. The chief medical officer of the Local Government Board has asked physicians to obtain specimens of suspected foods and communicate with the local health officers. In one case a gas-producing anaerobic gram-positive bacillus which so far resembles the *Bacillus botulinus* has been found. Possibly the outbreak may be connected with the greater consumption of canned foods under war conditions.

Scientific Report of War Bread

The bread now in use is prepared from grain milled to 90 per cent. with the addition of other cereals. After investigation, a committee of the Royal Society has issued a report on the following questions: 1. What gain, if any, in food value accrues from a rise in the milling standard from 80 to 90 per cent., and does the dilution of wheat flour with other cereals modify the food value of the bread? 2. What would be the effect on the health of the consumption of such breads? 3. How far would such breads prove acceptable? Experiments were made with wheat flour, extracted to 80 and to 90 per cent. The analytic work was done in the biochemical department of the University of Cambridge and in the Physiological Laboratories of the universities of Glasgow and London. The diet consisted of 800 gm. of bread with butter, cheese, minced or potted meat, fruit jelly, milk and sugar, tea or coffee, and in one case beer was taken as a beverage. This dietary yielded about 3,680 calories a day. The effects were remarkably uniform. Bread made from the 80 per cent. flour yielded for nutrition 96.1 per cent. of the energy contained in the diet; bread made from 90 per cent. flour, 94.5 per cent. The loss of energy with the second bread was greater (5.5 per cent.) than with the first (3.9 per cent.). The intestinal secretions were considered to contribute largely to this. The feces with the 90 per cent. bread were more bulky, and the coarser particles of this bread produced a greater stimulation of the secretion of the intestine. The increase in the bulk of the evacuation is not an evil. and in the case of many is even an advantage. As to the nitrogenous constituents, the average digestibility was 89.4 per cent. in bread made from flour extracted to 80 per cent., and 87.3 per cent. in that extracted to 90 per cent. In most of the cases there was a slight gain in body weight with both breads. Thus a greater proportion of the energy of the grain is available for human consumption when flour is milled at the 90 per cent. scale than on the 80 per cent. scale. The increase would extend the cereal supply of energy for the country for more than a month. Against this is to be set the loss of protein in the offal as food for pigs. Another set of experiments were made with bread made from flour consisting four fifths of wheat extracted at 80 per cent., and one fifth of maize. At first the flavor of the maize was commented on, and there was in some cases disturbance of digestion, attended sometimes with diarrhea, and more often with constipation; but these symytoms passed off. The general conclusion is that bread made with the addition of maize flour was as digestible as bread made without it, and it was well digested by children. The addition of maize made practically no difference in the utilization of energy and nitrogen. Observations were made at a canteen on the dietetic effect and on the palatability of bread made from flour containing four fifths of wheat extracted to 90 per cent., and one fifth of other permitted cereals (10 per cent. barley, made up to 20 per cent. with maize and rice, or rice alone). It was found to be palatable and never to cause indigestion.

Vital Statistics for 1916

The registrar-general's seventy-ninth annual report for the year 1916, which has just been published, is of unusual interest, because in that year the war existed long enough to affect the figures considerably. The birth rate was 20.9 per thousand living, and was the lowest on record. It was 4.6 below the average for the ten years 1905-1914 (which were practically unaffected by the war). On the whole, the reduction of natality, which amounted to about 12 per cent. on the figures for 1914, is less than might have been expected, and compares favorably with the experience of other belligerent countries. The civilian death rate was 14.4 per thousand living, and was slightly below the average of the decennium before the war. The rate of 1916 is considered to be the lowest recorded, provided allowance is made for the effect of enlistment on the population. The standardized mortality of males ordinarily exceeds that of females. Up to 1860 the excess was not more than 9 per cent.; but in 1916, in consequence of the war, the excess amounted to 32 per cent. The most remarkable feature is the low death rate in the first quinquennium of life. It was much lower than any previously recorded, and was less than half the rate prevailing in the concluding years of the last century. The all-age mortality from typhoid and from scarlet fever was the lowest on record, while diphtheria and influenza were more fatal than the average. But the death rate from tuberculosis showed a further advance on the high rate of 1915, although the increase did not extend to young children, the mortality under 5 years being the lowest hitherto recorded. Cancer was more fatal in 1916 than in any other year, and cerebrospinal fever continued to be abnormally destructive.

In view of the loss of life in the war the statistics of childhood are of unusual importance. The births in England and Wales in 1916 were in the proportion of 1,049 males to 1,000 females, against 1,033 to 1,000 in the preceding five years. This proportion is by far the highest recorded during the last half century. It certainly bears out the old view, regarded by some as a superstition, that war increases the proportion of male births because Nature endeavors to compensate for the loss of male life in warfare. Of the deaths at all ages, 41.1 per cent. were those of infants under the age of 1 year. These deaths correspond to a mortality rate of 91 per thousand births, the lowest ever recorded. It was below the average in the preceding decennium by 20 per cent. This decline was in part due to low diarrheal fatality, but the greater part of it is accounted for under other diseases less subject to climatic influences. The mortality in infants from tuberculosis was 2.39 per thousand births, much the low[illegible] on record.

PARIS LETTER

Paris, April 25, 1918.

Surgery of Wounded Nerves

At a recent meeting of the Société de chirurgie de Paris, Dr. Delagenière of Mans presented an interesting communication on the remote result of the surgical treatment of wounded nerves, comparing nerve suture, grafting and liberations from fibrous constrictions.

NERVE SUTURE AND GRAFTING

Among 245 cases followed for two and a half years, there have been 181 sutures in good condition with 120 excellent results, 41 fair or mediocre (slow regeneration, but defective and incomplete), and only 20 failures, a total of 88 per cent. positive results and about 70 per cent. excellent results. He asserted that a properly made suture is nearly always successful. The earlier the suture is done, the more rapid is the regeneration of the nerve; if the suture is done late, the regeneration is retarded. Delagenière has obtained excellent results even when operating as late as twenty-eight months after nerve division. Regeneration also seemed to take place more rapidly in cases of complete division with persistent fibrous tissue than when there was solution of continuity, because then the disorganization of the peripheral segment was greater. The nerves which regenerate best are the radial, musculocutaneous and external popliteal. The internal popliteal, the cubital and especially the median, regenerate more slowly, which is perhaps due to the considerable number of sensitive fibers which enter into the make-up of these nerves, and to the danger of deviation of the regenerated nerve fibers, the motor fibers going uselessly astray in the empty sheaths of the sensory fibers, and vice versa. When there is loss of much nerve tissue, success may be had by resorting to grafting, using a piece of the musculocutaneous nerve. Of nine cases noted by Delagenière, three were almost complete and six were more or less complete successes.

It is difficult to foretell the time when regeneration will occur because a number of factors must be taken into consideration. In the case of the radial, Delagenière has often seen complete regeneration occur as early as after four months, when the suture had been done early and under the best conditions; on the other hand, in the cases of the same nerve, when conditions were not so favorable, thirteen months and more had elapsed before regeneration had taken place. The length of nerve to be regenerated must always be taken into consideration.

NEUROLYSIS: LIBERATION OF THE NERVE

It is always much more difficult to form an opinion as to the value of nerve liberation. Delagenière has done comparatively few of these operations (113); it has seemed to him that the procedure does not, as a rule, yield results superior to nonintervention. Here, nevertheless, are the conclusions which he believes may be drawn: In cases of nerve lesions of the type of a simple paralysis and in cases of constriction by a fibrous band, liberation, when done early enough, always yields remarkable results, rapid and complete. In the cases of severe and extensive compression, signs of regeneration, until then absent, will appear after a free liberation. In the complex lesions, with neuromas and *chéloides nerveuses*, liberation is wholly ineffectual; Delagenière has many times changed his plan and performed a successful suture after such a liberation. In the neuritic cases with pain symptoms (causalgia), he has had some good results follow liberation, but, on the whole, very rarely; in nearly all the cases the liberation proved a failure.

On the contrary, emboldened by the almost constant success following nerve suture, he has for the past eighteen months, in cases of severe neuritis (seventeen cases) almost constantly divided and sutured the nerve. This technic has yielded excellent results.

Wounds of Vessels

At one of the recent meetings of the Société de chirurgie de Paris, Dr. Hartmann reported a series of observations made by Dr. Gatellier in 123 cases of ligation of blood vessels, including various arteries. Of this number, twenty ligations were made for ordinary lesions, not causing shock from hemorrhage. All terminated in a cure. In the remaining 103 cases, shock was present. Among these were ninety-six cures (eight following secondary amputation) and seven deaths. So far as amputations are concerned, it must be noted that the outcome of a vessel injury depends on the artery involved. Following the ligation of a vessel of the arm, the popliteal artery and the posterior tibial vessels, the circulation is always reestablished without untoward incident; but in the case of other vessels the result is not always the same. Among five ligations of the axillary artery there were three secondary amputations (66 per cent.); in two cases of ligation of the iliac there was one amputation (50 per cent.); among eighteen femoral ligations there were three amputations (23 per cent.); among eleven ligations of the posterior tibial vessels there were two amputations (18 per cent.).

LIMITATIONS OF LIGATIONS

From these observations the conclusion may be drawn that a ligation which saves life does not always save the member. Therefore, Gatellier decided to improve on ligation. The opportunity soon presented itself in the case of a man who had received a wound high up in the popliteal space with ischemia of the leg and in imminent danger of rapidly occurring gangrene. In this case Gatellier had recourse to arterial intubation and obtained a reestablishment of the circulation in four hours.

Paralysis from Injury of Spinal Cord Without Lesion of the Dura

Dr. Georges Guillain, assistant professor à la Faculté de Médecine de Paris, and Dr. J.-A. Barré recently read a paper on this subject before the Société médicale des hôpitaux de Paris in which they showed that, independently of the cases in which a projectile of war injured the cord directly after having opened the dura mater, organic paraplegias of various types and various degrees of gravity are seen, from injury of the spinal cord from the mere passage of a projectile at a certain distance from the cord without even having injured the dura mater. He saw a considerable number of such cases during the offensive of the Somme; the mild cases had been evacuated to the interior, but he regretted to report that there were fifteen deaths. In these fatal cases vertebrae had been injured. There was either fracture of a spinous process at its base, or of a lamina, or the body of the vertebrae had been pierced. The most common medullary lesion was hematomyelia, either alone or accompanied by acute necrosis or myelomalacia. The bloody effusion was sometimes limited to parts of one or two medullary segments, and sometimes involved six, eight or even ten segments. In several cases there was a bloody perimedullary or subarachnoid suffusion and an intradural or extradural hemorrhage. Sometimes, probably following an intradural hemorrhage, a loose meningomedullary symphysis, of slight extent, had developed.

SYMPTOMS FROM CONCUSSION OF SPINAL CORD

The clinical picture of these various lesions was, in the main, of two types: (1) that of a total section of the cord (four cases); (2) that of a localized medullary lesion (eleven cases). The syndrome of a total section was characterized by the following symptoms: complete loss of motion and sensation of every kind, often loss of muscle tone, but sometimes normal at the beginning; abolition of the tendon reflexes; cutaneous plantar reflex in flexion with or without diffuse reactions; superficial cremasteric reflex often abolished at first but appearing after an attempt to induce the deep cremasteric reflex; cutaneous abdominal reflexes abolished; absence of *réflexes de défense* produced by pinching the skin of the back of the foot or by the maneuver of Pierre Marie-Foix; constant retention of the urine; disturbance of the temperature of the paralyzed members, and early or late bed-sores. Slight involuntary movements, almost continuous, of the toes were noted twice. These four patients survived for from three to five days.

The localized lesions manifested themselves by a paraplegia less uniform than that seen in the cases of total section; the tendon reflexes were abolished ten times in the eleven cases; the cutaneous plantar reflex was of a variable type, in extension, in flexion, or abolished, or different on the two sides, or transforming flexion into extension; as a rule, the cremasteric reflexes were present; the abdominal skin reflex was usually very weak or absent; the *réflexes de défense* were present in more than half of the cases. Sensation was conserved in a zone of variable height, particularly in the region of the sacral nerves. Syringomyelic dissociation, which would be expected in the cases where hematomyelia is the principal lesion, occurred seldom and was doubtful. The maneuver of Lasègue was painful, even when there was extensive or total anesthesia of the legs; it is important to note this fact, because it alone is sufficient to show that the section is incomplete. Urine retention was the rule. These patients survived longer than did those who sustained a total section of the spinal cord; they all lived more than two months.

Guillain and Barré called attention to the fact that none of the patients who had a local lesion and who had died in their service had presented the syndrome of Brown-Séquard; they have been able to evacuate all the cases presenting the Brown-Séquard syndrome and many of them have been ameliorated. This difference in gravity between the lesions, even extensive, when they remain unilateral, and the bilateral lesions should be borne in mind.

Traumatic Shock

At a recent meeting of the Société de chirurgie de Paris, Dr. R. Picqué read a very interesting paper on this subject. On the basis of personal experience, he is convinced that immediate shock is a rare occurrence, aside from rapidly fatal hemorrhage, severe concussions and certain cases of poisoning with carbon monoxid generated in the sudden combustion of the explosives, to which not enough attention has been directed. As a matter of fact, shock is observed less often at the advanced posts than at the ambulances, and less often on the firing line than at the advanced posts. Shock is due mainly to hemorrhage and to subacute infection, particularly among the victims of many wounds. Therefore, from the standpoint of treatment, the intervention in the shock cases must be active; however, no more should be done than is consistent with getting good results. The technic followed by Picqué is as follows:

During the preparation of the patient, a combination of warming, serotherapy and the administration of cardiovascular tonics, his case is investigated thoroughly in order to catalog the nature of his injuries and determine the gravity of his case, both immediate and ultimate, and outline the treatment to be adopted. The examination of the bloodvessels is of first importance. This done, the intervention is proceeded with variously according as the patient has only a single wound or multiple wounds.

TREATMENT OF SINGLE WOUNDS

In the first instance, it is a question of a conservative intervention, done rapidly, according to the technic in general use today. But, whether after shock a primary suture should be done will depend on whether the surgeon will have time to make a satisfactory excision of the contused tissues, or the reconstructing of the normal anatomy of the region will prolong an operation which should, under the shock circumstances, be of short duration. In cases of excision, rather than perform in the traumatized area an atypical operation liable to leave behind it an infection, Picqué always carries his dissection back to the healthy zone, immediately above the lesion, and amputates, after careful ligation of the principal vessels, under ethyl chlorid anesthesia. Having excised the traumatized tissue, the principal source of shock, transfusion is done if the blood pressure does not rise after a few hours. Or the donor might be prepared for the transfusion during the operating, if hemorrhage is so severe as to cast some doubt on the prognosis.

TREATMENT OF MULTIPLE WOUNDS

With multiple wounds, he distinguishes between the wounded presenting some predominant lesion and those who do not. In the former, the principal lesion should be operated on rapidly, while the accessory lesions, dissected and cleaned, are thoroughly disinfected with the expectation of doing a more complete operation later on. When the lesions are all on the same member, a careful analysis should be made to determine whether the intervention should be a conservative one or amputation. In the former case, intervention, necessarily, will be much more delicate, more laborious and prolonged than with excision. It requires the extraction of all projectiles, dissecting out rapidly all the tracts and antiseptisizing provisionally. And then, good results may be obtained from the use of cytophylactics and antiseptics. While in the strict sense of the word, these do not kill all the bacteria, they will, at least, attenuate the virulence of the bacteria for a sufficient length of time to permit of an increase of the patient's resistance, and permit a more thorough operation later. Blood transfusion does not, however, appear to be indicated in these cases.

SHOCK

Professor Quénu reported to the society Dr. Lacoste's experiences with 13 severely wounded soldiers, the injuries being limited to one member, who had all been treated by immediate amputation, within two to five hours, without a single fatality. These cases comprised 8 with a crushed leg; 2 with a crushed foot; 2 with crushed arm or elbow; and the hand had been torn off in one case. Thirteen amputations were done, 6 of the leg, 1 of the thigh, 2 of the knee, 1 Symes', 2 of the arm and 1 of the forearm. All these men were evacuated in good condition after a variable delay. All had had hemorrhage, but in spite of the anemia and bad general condition the operation was well supported. Therefore, Lacoste has come to agree with Quénu that a severe hemorrhage is not a contraindication to rapid amputation when this can be done early, and it is realized that there is no possible chance of conserving the member.

NATURE OF SHOCK

Lacoste's observations demonstrate anew the rarity of immediate shock even among cases with severe hemorrhages. Shock does not manifest itself until later, after several hours. Of course, its appearance is favored by the hemorrhage, and the existence of hemorrhagic shock cannot be denied, but usually it is of other origin. It is not a vasomotor inhibition, as has been claimed by some; still less a subacute infection, but a genuine chemical intoxication, of which it presents the entire set of symptoms. The intoxication takes its origin in the contused wounds involving large masses of muscle. Quénu admits that the crushing of a large mass of muscle liberates numerous protein substances, some of which are very toxic to the organism. The rapid disappearance of the shock following on the removal of the traumatic focus, favors the theory that the real cause of shock is located in that focus. On the other hand, the primary reunion, always aimed at and sometimes obtained, is good evidence that there had not been complete microbic evolution in the focus, and that the symptoms there must have been the result of chemical and not of bacterial intoxication.

Dr. Potherat's personal observations also confirm the rarity of immediate shock, as stated by Dr. Quénu. Having been in active service with an ambulance during a battle at the beginning of the war, there passed through his hands and those of his aids in the course of a few hours 600 recently wounded, none of whom presented shock phenomena, although a considerable number were severely wounded. Some of them had arm injuries of such extent that only a flesh or skin flap held the member attached; a cut of the scissors freed the member. Others had a leg crushed, with vast destruction of tissue; the blood flowed so abundantly that it could be collected in a basin placed on the litter carrying the wounded. But, in spite of all this, these wounded were not in a state of shock.

Marriages

Lieut. Walter Edward Foley, M. R. C., U. S. Army, Davenport, Iowa, now stationed at Camp Hancock, Ga., to Miss Ina Mary Gleason of South Haven, Mich., in Chicago, May 20.

Lieut. Stuart Howard Bowman, M. R. C., U. S. Army, Maquoketa, Iowa, now on duty at Camp Meade, Md., to Miss Bessie C. Moses of Auburn, N. Y., May 16.

Lieut. John Vardyman Dillman, M. R. C., U. S. Army, to Miss Luella Caroline Goodenough, both of Louisville, Ill., April 25.

Lieut. L. J. Schermerhorn, M. R. C., U. S. Army, Stockton Calif., to Miss Eugenia Burns of San Jose, Calif., April 28.

Lieut. John Francis Barton, M. R. C., U. S. Army, to Miss Sandra Olson, both of Calumet, Mich., May 11.

P. A. Surg. Reginald Buchanan Henry, U. S. Navy, to Miss Jane Byrd Ruffin, at Norfolk, Va., April 30.

Charles Mills Herold, Nitra, W. Va., to Miss Myra Boughton of Elyria, Ohio, May 7.

Eugene W. Mitchell, Salem, Ohio, to Miss Gladys Hildebrand of Louisville, Ky., May 15.

B. Q. Dysart to Miss Minnie B. Munnis, both of Granville, Ill., May 18.

Deaths

Major James Chew Johnston, M. R. C., U. S. Army, New York City; New York University, New York City, 1892; aged 48; a Fellow of the American Medical Association; a member of the American Dermatological Association; assistant professor of clinical medicine in Cornell University; pathologist to the New York Skin and Cancer Hospital; editor of the *Journal of Cutaneous and Genito-Urinary Diseases* from 1896 to 1902; dermatologist to the Cornell Dispensary; who suffered a general physical breakdown by reason of overwork, while on duty with a base hospital in France and was invalided home; died at his home, May 11.

Carl G. Viehe, Evansville, Ind.; New York Homeopathic Medical College, New York City, 1895; aged 48; a Fellow of the American Medical Association; surgeon to the Deaconess Hospital, Evansville; for several years president of the board of health of Evansville; while on his return from a trip to the Hawaiian Islands, was seized with an infection of the ear, followed by meningitis, from which he died in San Francisco, May 16. He was an officer of the Evansville City National Bank, and vice president of the O. H. Klamer Furniture Company.

Sylvester Demarest, Suffern, N. Y.; Bellevue Hospital Medical College, 1885; aged 56; a Fellow of the American Medical Association, and a member of the Erie Railroad Surgeons' Association; while driving in his automobile from Paterson, N. J., to Suffern, was struck by a train at a grade crossing at Glenrock, May 9, and died a few hours later from his injuries in the General Hospital, Paterson, N. J.

Stafford Potter Jones, Marinette, Wis.; Northwestern University Medical School, 1868; aged 74; a pioneer practitioner of Marinette; for many years health officer of the city; died at his home, May 11, from pernicious anemia. On April 23, the physicians of the city celebrated the fiftieth anniversary of Dr. Jones' practice in Marinette at St. Joseph's Hospital where the guest of honor was at that time a patient.

James Glasgow Heading, Port Royal, Pa.; College of Physicians and Surgeons, Baltimore, 1882; aged 58; a Fellow of the American Medical Association; director of the First National Bank of New Bloomfield, Pa.; who had been under treatment in a hospital in Philadelphia on account of disease of the kidney; died in that institution, May 13, after a surgical operation.

John Calvin Workman, Ordway, Colo.; Columbus (Ohio) Medical College, 1879; aged 62; formerly a member of the Colorado State Medical Society; at one time president of the Belmont County (Ohio) Medical Society, and president of the Crowley County Medical Society in 1914 and 1916; died in Rocky Ford, Colo., April 29, from nephritis.

Frederick Cecil Skinner, La Claire, Iowa; State University of Iowa, College of Homeopathic Medicine, 1898; aged 44; a member of the Iowa State Medical Society; who was in New York taking a special course in diseases of the eye, ear, nose and throat; died in the Post-Graduate Hospital, New York City, May 11, after a surgical operation.

Wylie Hamilton Forsythe, Louisville, Ky.; Hospital College of Medicine, Louisville, Ky., 1898; aged 44; formerly a Fellow of the American Medical Association; a member of the Kentucky State Medical Association; for several years a medical missionary in Korea; died at the home of his mother in Louisville, May 9, from sprue.

George W. Kugler, Hightstown, N. J.; Jefferson Medical College, 1885; aged 55; for many years a member of the medical staff of the Pennsylvania Railroad; died at his home, May 11, from the effects of a gunshot wound of the head, believed to have been self-inflicted, with suicidal intent, while despondent on account of ill health.

Martin Joseph Fleming, Brooklyn; College of Physicians and Surgeons in the City of New York, 1872; aged 71; formerly a Fellow of the American Medical Association; for several years a member of the visiting staff of Bellevue Hospital; a well known connoisseur of violins; died at his home, May 9, from influenza.

David Charles Davies, Pasadena, Calif.; Northwestern University, Medical School, Chicago, 1881; aged 84; formerly a member of the Medical Society of the State of California; at one time in the United States Consular service at Swanset, South Wales; died at his home, May 13.

Henry David Siegfried, Denver, Ill.; Keokuk (Iowa) Medical College, 1898; aged 46; formerly a Fellow of the American Medical Association; while in an altercation with a tenant, May 3, was struck with a club, fracturing the skull, and died from his injuries a few hours later in Blessing Hospital, Quincy, Ill.

Roger Martin, Worsham, Va.; College of Physicians and Surgeons, Baltimore, 1887; aged 56; formerly a Fellow of the American Medical Association; a member of the Medical Society of Virginia; who had been suffering for ten years from Landry's paralysis; died at Vulcan, Va., about May 6, from pneumonia.

A. A. Surg. Alan B. Cleborne, U. S. P. H. S., Savannah, Ga.; University of Virginia, Charlottesville, 1902; aged 39; formerly a member of the Medical Association of Georgia; on duty at the United States Marine Hospital, Savannah; died in that institution, May 13, while performing a surgical operation.

James Hardin Wood, Attalla, Ala.; Vanderbilt University, Nashville, Tenn., 1882; aged 60; a Fellow of the American Medical Association; president of the Etowah County Medical Society in 1914; local surgeon of the Southern and Alabama Great Southern railways; died at his home, in February.

Milan Daniel Baker, Norfolk, Neb.; University of Nebraska, College of Medicine, Omaha, 1903; aged 41; a member of the Nebraska State Medical Association; formerly coroner of Madison County; a veteran of the war with Spain; died at his home, April 27.

Horace S. Bowers, Neosho, Mo.; Kansas City (Mo.) Medical College, 1895; aged 51; a member of the Missouri State Medical Association and for many years secretary of the Newton County Medical Society; died at his home, February 23, from cerebral hemorrhage.

William Constantine Goodell, Philadelphia, University of Pennsylvania, Philadelphia, 1895; aged 55; a member of the Medical Society of the State of Pennsylvania; a specialist in obstetrics; died in the Orthopedic Hospital, Philadelphia, May 15, from heart disease.

Arthur Z. Barfield, Westhoff, Texas; Baylor University, Dallas, Texas, 1910; aged 38; formerly a Fellow of the American Medical Association; a member of the State Medical Association of Texas; died in a sanatorium at Cuero, May 8, from pneumonia.

Henry Edward Goddard, Brockton, Mass.; Dartmouth Medical School, Hanover, N. H., 1897; aged 65; a Fellow of the American Medical Association; owner and director of the Goddard Hospital, Brockton; died in that institution, May 12, from pneumonia.

Charles E. Gaines, Covington, Ohio; University of Louisville, Ky., 1894; aged 58; a member of the Ohio State Medical Association; for two terms coroner of Miami County; died in Grant Hospital, Columbus, Ohio, May 11, from diabetes.

George H. Morrill, St. Louis; Homeopathic Hospital College, Cleveland, 1861; aged 76; for many years a member of the staff of the St. Louis Children's Hospital; died at his home, April 26, from septicemia due to an infection of the neck.

Eugene M. Bishop, Wilkesville, Ohio; Starling Medical College, Columbus, Ohio, 1900; aged 42; a member of the Ohio State Medical Association; was found dead from heart disease, May 9, on the road between Hawk and Wilkesville.

Everett Amos Graves, Coatesville, Pa.; University of Pennsylvania, 1900; aged 42; a Fellow of the American Medical Association; visiting physician to the Coatesville Hospital; died at his home, April 28, from valvular heart disease.

Jean Isabelle Best Moore, Washington, Pa.; Womans' Medical College of Pennsylvania, Philadelphia, 1901; aged 41; formerly a medical missionary in Cairo, Egypt; died at the Washington City Hospital, April 7, from pneumonia.

Orestes Morton Brown, Everett, Mass.; University of Vermont, Burlington, 1883; aged 62; formerly a Fellow of the American Medical Association; a member of the Massachusetts Medical Society; died at his home, May 13.

William G. Drake, Bolivar, Mo.; Washington University, St. Louis, 1877; aged 73; a member of the Missouri State Medical Association; a veteran of the Civil War; died at his home, May 19, from chronic interstitial nephritis.

William Henry Hoag, Manhasset, N. Y.; College of Physicians and Surgeons in the City of New York, 1865; aged 78; major-surgeon of the 134th New York Volunteer Infantry during the Civil War; died at his home, May 13.

Joseph Tatum White, Freeport, Ill.; Missouri Medical College, St. Louis, 1888; aged 51; a Fellow of the American

Medical Association, and president of the Stephenson County Medical Society; died at his home, May 14, from lobar pneumonia.

William Selman Jenkins, Allentown, Pa.; Jefferson Medical College, 1890; aged 56; a Fellow of the American Medical Association; while on a fishing trip to Pocono Lake, died suddenly, May 11, from acute gastritis.

Bernard Samuel Jacobson, Baltimore; University of Maryland, Baltimore, 1916; aged 24; resident physician at the Hebrew Hospital and Asylum, Baltimore; died, May 16, from lymphosarcoma of the mediastinum.

Ephraim Morrison, Newton, N. J.; Bellevue Hospital Medical College, 1875; aged 65; a Fellow of the American Medical Association; president of the Merchants' National Bank, Newton; died at his home, May 11.

Wallace R. Flower, Ashtabula, Ohio; Western Reserve University, Medical Department, Cleveland, 1875; aged 66; died in St. Vincent's Hospital, Cleveland, about May 2, from carcinoma of liver and stomach.

William Aaron Gibson Agricola, Glascock, Ga.; University of Georgia, Augusta, 1874; aged 66; formerly a member of the Georgia Legislature; died in Sandersville, Ga., March 27, from disease of the kidney.

William Percy Gibbes, Frogmore, S. C.; Medical College of the State of South Carolina, Charleston, 1893; aged 64; formerly a member of the South Carolina Medical Association; died at his home, May 14.

William T. Speaker, Manson, Iowa; Northwestern University Medical School, Chicago, 1878; aged 66; a Fellow of the American Medical Association; died at his home, May 2, from carcinoma of the viscera.

Benjamin Franklin Wilson, Carbon, Texas (license, Judicial District Board, Texas, 1893); aged 51; a practitioner since 1891; a Fellow of the American Medical Association; died at his home, April 2.

William N. Porteous, Minneapolis; McGill University, Montreal, 1884; L.R.C.P. (Edin.), 1884; aged 62; a specialist on diseases of the nose and throat; died in Eitel Hospital, Minneapolis, May 15.

William L. Wallace, Kingstree, S. C.; Baltimore Medical College, 1883; aged 84; formerly a member of the South Carolina Medical Association; a Confederate veteran; died at his home, May 13.

Robert Hamilton Devine, Wahpeton, N. D.; Jefferson Medical College, 1897; aged 55; a member of the North Dakota State Medical Association; died at his home, May 4, from pneumonia.

Prather Buchanan Curlin, Hickman, Ky.; University of Louisville, Ky., 1902; aged 38; a member of the Kentucky State Medical Association; died at his home, May 18, from pneumonia.

Jacob A. Schneider, Concordia, Mo.; University Medical College, Kansas City, Mo., 1894; aged 62; died in the Research Hospital, Kansas City, April 4, from diabetes mellitus.

John A. Hutson, Bremen, Ga.; Atlanta (Ga.) Medical College, 1892; aged 54; formerly a member of the Medical Association of Georgia; died at his home, May 1, from heart disease.

Everett W. Gee, Richmond, Va.; Medical College of Virginia, Richmond, 1889; aged 52; a Fellow of the American Medical Association; died at his home, May 6, from heart disease.

Edgar B. Jones, Columbus, Ohio; College of Physicians and Surgeons, Baltimore, 1881; aged 62; formerly a Fellow of the American Medical Association; died at his home, May 3.

John Hardy Page, Baker, Ore.; Berkshire Medical College, Pittsfield, Mass., 1865; aged 80; a veteran of the Civil War; died at the home of a friend, April 30, from heart disease.

John Thomas Whitlock, Mount Vernon, Ill.; Missouri Medical College, St. Louis, 1890; aged 57; a Fellow of the American Medical Association; died at his home, April 30.

George G. Mallett, Caldwell, Ohio (license, Ohio, 1896); aged 55; a member of the Ohio State Medical Association; died at his home, April 26, from organic heart disease.

William Wakefield, Lake Benton, Minn.; University of Michigan, Ann Arbor, 1882; aged 72; was instantly killed, April 28, by being struck by a train at Lake Benton.

James Hickerson, Ronda, N. C.; Jefferson Medical College, 1856; aged 86; surgeon of U. S. Volunteers during the Civil War; died at his home, April 6, from senile debility.

Irene Robinson Pratt, Chicago; University of Illinois, College of Physicians and Surgeons, Chicago, 1901; aged 54; died at her home, May 15, following an operation.

Louis Frederick Frank, Milwaukee; New York University, New York City, 1879; aged 61; president of the Wisconsin Conservatory of Music; died at his home, May 12.

John Wesley Young, Richmond, Va. (license, Oklahoma, 1910); aged 53; formerly a practitioner of Lawton, Okla.; died in Richmond, March 6, from tuberculosis.

Solon Snethen Duggan, Eagleville, Tenn.; Vanderbilt University, Medical Department, Nashville, Tenn., 1884; aged 69; died at his home, May 5, from arteriosclerosis.

Rufus Lafayette Grogan, Murray, Ky.; Medical Department of the University of Tennessee, Nashville, 1895; aged 81; died at his home, May 4, from senile debility.

William Townsend Philips, Library, Pa.; University of Michigan, Medical School, Ann Arbor, 1884; aged 75; veteran of the Civil War; died at his home, May 2.

Jesse Langtry Black, Pittsburgh; Jefferson Medical College, Philadelphia, 1896; aged 51; a Fellow of the American Medical Association; died at his home, May 2.

Daniel W. Mudge, Leslie, Mich.; Hahnemann Medical College and Hospital, Chicago, 1881; aged 67; died at his home, April 29, from sarcoma of the intestines.

Eliab W. Capron, Lotus, Fla.; Albany (N. Y.) Medical College, 1855; aged 91; formerly a practitioner of Lansingburg, N. Y.; died at his home, May 2.

John A. Walls, Richmond, Ind.; Physio-Medical College of Indiana, Indianapolis, 1884; aged 69; died at his home, May 12, from cerebral hemorrhage.

Alfred William Linden Jackson, New York City; New York University, New York City, 1897; aged 56; died at his home, May 12, from septicemia.

Truman C. Campbell, Fairmont, Okla.; Beaumont Hospital Medical College, St. Louis, 1891; aged 67; died near Eva, Okla., April 12, from paralysis.

William J. McAlpin, Gurdon, Ark. (license, Arkansas, 1903); aged 82; a veteran of the Civil War; died at his home, April 21, from pneumonia.

Joseph Oliver Greenlaw, Artesia, N. M.; University of Nashville, Tenn., 1904; aged 44; died in New Orleans, February 27, from empyema.

Gilbert Daniel Furbee, Terra Alta, W. Va.; Maryland Medical College, Baltimore, 1905; aged 38; died at his home, May 3, from nephritis.

Jens Paulus Immanuel Pfeiffer, Bedford, Mass. (license, Massachusetts, years of practice); aged 76; died at his home, May 3, from paralysis.

Amasa Frank Lombard, Salt Lake City; University of Vermont College of Medicine, Burlington, 1885; aged 64; died at his home, May 1.

Aubrey J. Richardson, Pasadena, Calif.; Hahnemann Medical College and Hospital, Philadelphia, 1882; aged 58; died at his home, May 5.

Ion Marion Pfouts, Rittman, Ohio; Ohio Medical University, Columbus, 1898; aged 43; died at his home, April 23, from pneumonia.

James R. Claunch, Jonesboro, Ark. (license, Eclectic State Medical Board of Arkansas, 1903); aged 85; died, April 3, from paralysis.

Lynn B. Moore, Cotton Plant, Ark.; University of Louisville, Ky., 1881; died at his home, April 24, from cerebral hemorrhage.

John Fretts Detweiler, Uniontown, Pa.; Rush Medical College, Chicago, 1891; aged 57; died at his home, May 2, from pneumonia.

William H. Stover, Walkerville, Mich. (license, Ohio, 1896); aged 77; a veteran of the Civil War; died at his home, April 27.

C. E. Taylor, Cochran, Ga.; Louisville (Ky.) Medical College, 1876; aged 66; also a druggist; died at his home, May 8.

Francis Naulteus, Hastings, Neb.; University of Louisville (Ky.) Medical Department, 1894; died at his home, May 8.

Henry J. Parker, Clayton, Ill.; Missouri Medical College, St. Louis, 1870; aged 72; died at his home, May 6.

Freeman E. Wilson, Hanover, Mich.; University of Michigan, Ann Arbor, 1900; died, about March, 1918.

James H. McDonald, Puyallup, Wash.; American Medical College, St. Louis, 1877; aged 77; died, April 28.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

MISBRANDED NOSTRUMS

Dr. Swan's Liver & Kidney Remedy.—The National Remedy Company of New York City manufactured a nostrum called "Dr. Swan's Liver & Kidney Remedy." This was analyzed by the federal chemists who reported that it contained about 5 per cent. alcohol, over 32 per cent. sugar, more than 8 per cent. glycerin with smaller amounts of sodium salicylate, strychnin and some laxative plant drug, together with indications of juniper. It was sold under claims that led the purchaser to believe that it was an effective remedy for diseases arising from a disordered condition of the liver, stomach and bowels, for dyspepsia, female diseases and malaria and for the cure of diseases of the kidneys, stone in the bladder, etc. The federal authorities held that these claims were recklessly and wantonly false and fraudulent. The company pleaded guilty and was fined $25.—[*Notice of Judgment No. 4754.*]

Stuart's Calcium Wafers.—F. A. Stuart Co., Inc., Marshall, Mich., shipped in interstate commerce quantities of a nostrum labeled "Stuart's Calcium Wafers." Some of the claims made for the product were:

> ". . . the preparation is perfectly harmless."
>
> "Children may take it with freedom and their delicate organisms thrive with its use."
>
> "Containing no poisonous ingredients."
>
> "A perfectly safe remedy."
>
> "It can be safely used by any person, man, woman or child with the assurance that no possible injury can result from its use."

These claims with others were declared false and misleading, in that Stuart's Calcium Wafers were not harmless but "did contain a poisonous ingredient, to wit, strychnin." In addition, certain curative claims were made for the stuff, among which were:

> "For Eruptions Scrofula . . . Constipation Humor Liver troubles . . . And all disorders and symptoms arising from impure blood."
>
> "The most powerful blood purifier known."
>
> "Skin diseases are relieved when the blood is charged with this great eradicator."
>
> "Will infuse renewed energy and strength into the exhausted nerves."
>
> "Containing in concentrated form all the elements to repair nerve tissue and depleted blood."

These claims and others of similar tenor were declared by the federal authorities false and fraudulent in that "Stuart's Calcium Wafers" were "incapable of producing the curative and therapeutic effects claimed therefor." As no one appeared to claim the property, the court entered judgment of condemnation and forfeiture and ordered that it should be destroyed.—[*Notices of Judgment Nos. 4773, 4774, 4775 and 4782.*]

Turpentine Man's, or Tydings' Remedy.—Charles Tydings and Edith Tydings, copartners who did business under the firm name of Charles Tydings & Co., Ocala, Fla., shipped in interstate commerce a quantity of "Turpentine Man's or Tydings' Remedy." This preparation, according to the federal chemists, was a glucose sirup containing potassium iodid, alcohol, and traces of salicylic acid, phosphates, calcium and an alkaloid. The claims made that it would eradicate cancerous growths and cure salt rheum, catarrh, female diseases, etc., were declared false and fraudulent and applied knowingly and in reckless and wanton disregard of their truth or falsity. Misbranding was further alleged because the quantity or proportion of the alcohol in the nostrum was not declared on the label. The concern pleaded guilty and was fined $5 and costs.—[*Notice of Judgment No. 4832.*]

Henry's Red Gum Compound.—This preparation was made by Henry L. McNulty, Norwood, N. Y. Government chemists reported that, in addition to large amounts of sugar and glycerin, the preparation also contained alcohol, chloroform and heroin. It was declared misbranded, first, because it failed to bear a statement on the label of the carton of the amounts of chloroform, heroin or alcohol in it; second, because the name was false and misleading in that it indicated to purchasers that the principal and active ingredient was red gum, a harmless medicinal agent, when in fact it did not contain red gum as its principal ingredient, but did contain heroin and chloroform, dangerous or habit-forming drugs. In addition, the government charged that the therapeutic claims made to the effect that it would cure all throat and lung diseases, croup, bronchitis, pneumonia and asthma were recklessly and wantonly false and fraudulent. McNulty pleaded guilty and was fined $25.—[*Notice of Judgment No. 4831.*]

Athlophoros.—This product of the Athlophoros Co. was analyzed by government chemists and reported to consist essentially of a solution of glycerin, sodium salicylate, oil of cinnamon and water. The preparation was sold under the claim that it was an effective remedy for sciatica, gout and sick headache, "cleansing the liver and kidneys from irritating substances," that it was a cure for neuralgia and a specific for sick headache. These claims the government held were false and fraudulent and applied knowingly and in reckless and wanton disregard of their truth or falsity. The company fought the case and attempted to prove by means of testimonials and "expert witnesses" that their claims were not fraudulent or false. The judge in summing up the case pointed out to the jury that as the concern was charged with making "false and fraudulent" claims, it was necessary not only that the government prove that "the so-called remedy is absolutely worthless as to its curative or therapeutic effect upon the ailments for which it is claimed" but also it must satisfy the jury beyond a reasonable doubt that the company had made these statements knowingly with a "wrongful motive for the purpose of deception." Evidently the government did both as the jury returned a verdict of guilty. The concern was fined $25 and costs.—[*Notice of Judgment No. 4834.*]

Dr. Thacher's Cholera Mixture and Dr. Thacher's Amber Injection.—These preparations were sold by the Thacher Medicine Co. of Chattanooga. The "Cholera Mixture" was found to contain alcohol and morphin, in addition to a laxative drug, sugar and aromatics. It was declared misbranded because the correct amount of alcohol present was not stated on the label and it was falsely and fraudulently claimed to be an effective remedy for all cases of cholera, diarrhea, dysentery, etc., and as a remedy for ailments of teething children.

The "Amber Injection" was found to contain alcohol, opium and zinc sulphate to which acetic acid had been added. Apparently, the composition of this stuff varied, as examination of two samples showed different results. In neither case did the label bear the statement regarding the quantity or proportion of opium and alcohol as the law requires. Furthermore, it was falsely and fraudulently claimed that the stuff was a cure for gonorrhea, gleet, spermatorrhea, whites, etc. The company was fined $75 and costs.—[*Notice of Judgment No. 4838.*]

Abbott Bros. Rheumatic Remedy.—This nostrum sold by Abbott Bros. Co., Chicago, contained 24 per cent. alcohol with 5 grains potassium iodid to each teaspoonful together with extracts of drugs such as sarsaparilla and dandelion. It was sold under the false and fraudulent claims that it was an effective remedy for rheumatism of every form and stage, for sciatica, for all "uric acid troubles" and for eczema and as a cure for sciatica, gonorrheal rheumatism, inflammatory rheumatism and Bright's disease. The jury, after due deliberation, declared the concern guilty and a fine of $200 and costs was imposed.—[*Notice of Judgment No. 4842.*]

Correspondence

"VISUAL FACTORS IN EQUILIBRATION, ESPECIALLY AVIATION"

To the Editor:—In The Journal, April 13, 1918, in an editorial entitled "The Bárány Tests in the Examination of Aviators," you apparently set the seal of "editorial" approval to what seems to be a misrepresentation of the object and value of the Bárány tests in the examination of prospective aviators for the United States Army. The editorial was apparently based on conclusions drawn from several contributions which have recently appeared in medical literature; two of them, one by Dr. Fridenberg and the other by Surgeons Parsons and Segar, appeared in The Journal, April 6 and 13, respectively.

The portion of Fridenberg's article which you quote as authority, "It has been generally assumed that a normal labyrinth is sine qua non and the only essential for equilibration," is most unfortunate—unfortunate, because untrue. Through discussions with medical men and the perusal of literature generally, I am not aware that any such general assumption exists. Quite the contrary, all writers on and men familiar with the subject of equilibration distinctly emphasize the fact that it requires a harmonious cooperation of several special senses for the maintenance of normal equilibrium, namely, that of the visual sense, muscle sense and the kinetic-static or so-called vestibular sense. Thus, normal equilibration depends on a tripod, as it were; but whereas with the visual and the muscle-splanchnic sense equilibration is only a collateral function, the kinetic-static sense differs from them in that equilibration and orientation are its sole and only functions. The immediate effect from the loss of the visual sense is blindness and not loss of equilibration; similarly, a disturbance in the function of the muscle and splanchnic sense does not produce loss of equilibration per se, whereas, on the other hand, an affection of the kinetic-static mechanism, no matter how slight—a point of congestion in the labyrinth perhaps the size of the head of a pin—is immediately made manifest by gross equilibratory disturbances. These are facts that every observing physician has seen for himself. It is not assuming too much, therefore, to say that the kinetic-static or internal ear mechanism is the chief but by no means the sole organ of equilibration.

It is self evident that in order to guide an aeroplane safely one needs a perfect equilibratory equipment, that is, a perfect internal ear mechanism and a normal visual mechanism, as well as an unimpaired muscle and tactile sense. To say that the medical advisors of the U. S. Army are not aware of a proposition so obvious as this is to credit them with stupidity. All one need do is to refer to the examination blanks giving the outlines of the physical requirements for aviators in detail to see that they are perfectly aware of the fact that a blind man or one with poor visual or color sense acuity is not good material out of which aviators are made. The fact is that careful and detailed examination of the eyes as well as of other special senses is undertaken as a matter of routine, with this addition, that in view of the importance of the internal ear and its intracranial pathways in the function of equilibration, most careful tests are performed in order to determine the integrity of this mechanism. The examination of this special sense is not made at the *expense of* any other special sense; it is simply an addition with the view of assuring the prospective aviator of a most perfect physical equipment for his work.

You also quote as "further evidence" the findings of Surgeons Parsons and Segar, namely, that in *many cases* the best ratings as aviators were obtained by men who had made the worst showing under the Bárány tests. In their contribution they have divided the fliers into three classes, "good," "average" and "poor," and have shown that the average nystagmus response of the good fliers was 24.2 seconds, whereas the average response of the poor fliers was 24.8 seconds. In other words, the poor fliers had on an average 0.6 second nystagmus longer than the good fliers. Assuming this to be true, it argues nothing against the value of the turning chair in the examination of fliers for the simple reason that in their analysis there is not a single instance of a good flier with no nystagmus or poor nystagmus. The fact that some individuals with a normal nystagmus will not make good aviators is conformable to a very well known fact that many persons with nimble and perfectly jointed fingers and arms will not make excellent piano players. The reason is simple: In order to become a good piano player, one needs other qualifications in addition to nimble fingers; similarly, in order to become a good flier, one needs other qualifications in addition to a perfect equilibratory mechanism. Supposing one were to set out to train a hundred persons to become piano players or violinists, one would at least make certain when selecting the candidates that none with "stiff joints" entered the group, remembering all the time that not all perfect-jointed persons would turn out to be good musicians. The position of the Army board is very similar: In choosing candidates for its flying personnel, it wants to make certain that they are at least free from any apparent physical defects that would greatly handicap them in their work, remembering at the same time that many persons with physically perfect attributes may lack that additional something which utilizes good physical material and shapes it into the perfect product. The facts adduced, therefore, from the contribution of Parsons and Segar simply endorse the stand the Army is taking, namely, that no good fliers are likely to be produced from men who have a poor or impaired equilibratory mechanism.

You refer to the statement of Surgeon H. Graeme Anderson of the Royal Navy in which he says:

> It has been assumed that sound equilibration and muscle sense is essential to flying, so that the aviator would be conscious of his position in space, realize at once any deviations therefrom, and correct these quickly. But in fog it has been found almost impossible to detect any deviation during flight. Time and again aviators coming out of the dark clouds or fog have found themselves flying one wing down, and it has been recorded that some have flown upside down without knowing it. Thus it is obvious that most of the impressions which control balance in flying come through the eyes.

It does not seem to be quite clear what he means when he says "but in fog it has been almost impossible to detect any deviation during flight." Does he mean deviation of the aeroplane from its true level? How, then, was this balancing accomplished? Surely not through the sense of sight: the eyes are of not much service in a fog. It must be, then, by means of the ears and muscle sense that equilibrium was maintained. The statement that it has been recorded that some have flown upside down without knowing it cannot be accepted in all seriousness. A captain and a major in the Flying Corps stationed at Essington, Philadelphia—pioneers in flying with the U. S. Army—definitely stated to me that such a thing is impossible; that when looping the loop or when performing any of the other aerial evolutions it is absolutely inconceivable and in their own experience impossible for a flier not to know when he is upside down. The surgeon's conclusions, then, that "it is obvious that most of the impressions which control balance in flying come through the eyes," are by no means so obvious.

In the experiment which Surgeon Anderson had carried out himself when he was taken up in an aeroplane blindfolded, he states that he was able to describe the position in space at various times, that is, he was able to do this during the climbing and flying with the right wing and with the first spiral downward to the right. He was blindfolded all the time. How could he do it unless the internal ear mechanism came to his aid? Surely any special sense that can tell the aviator this much is a definite asset to him, and the Medical Corps of the Aviation Service is not far amiss when it attempts to make certain that such a mechanism is normal before accepting a candidate for the Flying Corps. True, Surgeon Anderson in this experiment also states that he was not able to tell all the time all possible evolutions of the plane. We do not know if his vestibular mechanism is normal, as he was not examined in the turning chair: but assuming even that he is normal, it is simply in accord with our general knowledge that the eyes do play a rôle in equilibration and orientation, and no one realizes this better than the personnel in charge of the Aviation Corps, as is evidenced by the exhaustive and thorough eye examination to which every applicant of the Flying Corps is now and always has been subjected.

Summing up, the status of the Bárány tests from the standpoint of the aviator amounts to this: The internal ear and its intracranial pathways have for their sole function equilibration and orientation; therefore, this mechanism is a most important unit in the entire "equilibrium complex" of an individual. Since perfect equilibratory function is so important to the aviator, common prudence would suggest that each one of the mechanisms concerned in this function be carefully examined. The internal ear mechanism receives particular attention since it is peculiarly adapted for sensing motion and secondarily, position. It is examined in the turning chair, in which different portions of the mechanism are tested. We start with the assumption that a normal mechanism will produce normal responses. These normal responses are (1) nystagmus of a certain type and duration, and (2) vertigo of a certain duration which is made manifest to the examiner objectively by past-pointing and falling. When turning in the chair fails to produce normal nystagmus, vertigo, past-pointing and falling, it is assumed that there must be a definite reason for it. It is not considered that "it just happened so," but is looked on as due to an impairment of the inner ear or of its intracranial pathways. Such a person would therefore start with a handicap and is disqualified.

The otologists of this country have rendered our government a distinct service by pointing out the importance of the vestibular apparatus in aviation. The ability to simplify and standardize the tests, so that large numbers of applicants can be easily examined, added largely to the feasibility of such an examination and should redound to their credit. It is to be regretted, therefore, that doubt and mistrust should be sown throughout the profession at large solely because of a lack of a thorough understanding of the subject.

Lewis Fisher, M.D., Philadelphia.

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To the Editor:—In his article on "Visual Factors in Equilibration, Especially Aviation" (The Journal, April 6, 1918, p. 991), it is apparent that Dr. Fridenberg has been under a misapprehension as to the character and scope of the physical examination of applicants for flying service. Let me first recommend that he secure Blank 609, A. G. O., which is the physical examination blank for these applicants. He will at once be struck by the fact that of the thirty-two items of this examination, the first twelve are solely concerned with a complete examination of the eye. On the other hand, he will be equally struck with the fact that only one item (No. 20) deals in any way with the internal ear balance mechanism. This, I think, will give him a different attitude toward the ideas of those concerned in the examination of applicants for this service, and will go far to reshape the impulse which prompted him to say, "It has generally been assumed that a normal labyrinth is the sine qua non and the only essential for equilibration."

It will also assure him that as far as concerns his views expressed immediately following this quotation, they are entirely in accord with the views of the Chief Surgeon of the Aviation Section, namely, "this would be a very one-sided point of view, and that there exist other important factors of equilibrium which should not be overlooked." His statement that the "visual factors particularly have been overlooked" is only indicative of his having been misinformed as to the scope of the examination. The same comment applies to the sentence immediately following, in which he warns against neglecting "other factors in balance and vertigo," etc.

In stating that the "labyrinthine tests refer, naturally, to rotational vertigo alone," and then proceeding to call attention to the fallacy of the "view that all vertigo is rotational and therefore labyrinthine," he evidences a most unfortunate misapprehension of the otologic concept underlying the vestibular test. This is so simple that its soundness seems difficult to question. It is conceived that the individual selected to undergo special training as an aviator should be determined to possess normal physical equipment; his bones and muscles, cardiovascular, respiratory and gastro-intestinal apparatus should be normal; his intracranial and special sense equipment should be normal. One of the special senses to be subjected to scrutiny in this examination is the vestibular sense, the sole special function of which is perception of motion. We are in possession of information concerning the normal responses to tests of this special sense, and exactly so far as we are able to conduct such tests should we see to it that this special sense of motion perception should show as nearly a normal acuity as the special sense of light perception, which is required to show $^{20}/_{20}$ visual acuity.

One of the means of ascertaining that normal acuity of vestibular perception is present is the rotating chair. In subjecting this motion-perceiving special sense to its normal stimulus, namely, motion, it was determined to be most practical to apply this stimulus by means of a rotating chair, as the application of motion in a linear direction, for the period of time and in the intensity necessary to elicit certain responses to a standard stimulus, would necessitate apparatus entirely too bulky to be susceptible of practical application under ordinary conditions of office examination. By making use of a rotational motion stimulus instead of a linear motion stimulus, it was possible to work out a standard means of applying a motion stimulus in certain definite quality and quantity in a manner, and by means of an apparatus, easily handled in an office. For this reason, the subject of the tests of the vestibular apparatus is made to experience rotational vertigo. The definition of this vertigo is "the sensing of motion not in accord with fact." In other words, stimulation of the end-organ of this apparatus is set up, and lasts for a certain standard length of time in the normal; during the continuation of the stimulus, if the sensing apparatus is intact, the subjective appreciation of the stimulus continues; since the subjective appreciation in the normal is both quantitative and qualitative, and since the form of stimulus has been rotation, the consequent subjective perception is a rotational motion, or is rotational vertigo.

Dr. Yandell Henderson, professor of physiology at Yale University, described to me a similar test of his vestibular apparatus which he underwent unexpectedly during an inspection trip in a deep mine in Yorkshire, England, in company with Professor Haldane and some others. They were subjected to a very rapid ascent, in an elevator, vertically upward for a considerable period of time, after which he experienced a disquietingly convincing sensation of falling vertically downward; whereas in reality his vertically upward trip was continuing, but at a markedly slower rate of speed, as he learned afterward to his relief. This is exactly the kind of test to which a man is subjected in the rotating chairs, except that the character of motion stimulating the vestibular end-organs was in this instance linear motion rather than rotational motion. Just as following the rotation to the right, during the period of the consequent stimulus of the vestibular apparatus, the subject experiences the sensation of motion of the same character, namely, rotational, but in the reverse direction, or to the left, so Dr. Henderson experienced, after an intense stimulus of linear motion in a vertical direction upward, the natural reactionary sensation of linear motion rather than rotational, and in the opposite direction, or downward. I hope I have made it clear that the only object of testing a man in a rotating chair is to determine the degree of accuracy of his perception of motion, both qualitative and quantitative, and that the matter of inducing rotational vertigo is purely incidental to the use of the rotating chair, as it constitutes the most practical and convenient form of motion-producing apparatus for tests of this kind.

In referring to labyrinthine diseases, Dr. Fridenberg gives evidence of having failed to take into account that type of disease which is far more common and of more practical importance in connection with the subject in hand than the suppurative or infectious type of labyrinthitis, namely, the toxic type. I need only to refer, in this connection, to a few of the case reports which we have of applicants determined to possess normal vestibular acuity of motion perception at the time of their admission into the service, and who later on developed mumps, with secondary specific eighth nerve involvement, after the subsidence of which they showed a marked impairment of their acuity of motion perception.

I do not understand exactly how Dr. Fridenberg feels so certain that the possessors of dead labyrinths are not apt to try to fly, unless it be on the *a priori* grounds that the function abrogated in them is of considerable importance in flying. If I am correct in conceiving that he senses this importance of this function, it only goes to show that we, after all, are in accord in regard to the matter of appreciating the importance of the vestibular function to the aviator. I feel, indeed, that we are, because of what he proceeds to say, "In the first place, such defective labyrinths would have been detected in the course of instruction over the aviation field, or, at least, during the first trial flights." This statement could not have been made by a man who was not thoroughly in accord with the belief that the labyrinthine function is of great importance to the flier.

It is gratifying to note that his ideas concerning the possibility of explaining falls in flying machines coincide with those of the Chief Surgeon's Staff, as proved by his mention of other factors, such as the "effects of altitude and temperature on normal but susceptible organisms . . . and including, besides, cardiac syncope, embarrassed respiration or circulation, and panic fear." So much importance is laid on the possibility of these factors impairing the efficiency of the aviator in flying, that special cardiovascular, psychologic and physiologic departments have been established in the Medical Research Laboratory for the study of conditions which may constitute underlying factors in the development of these forms of danger to the flier.

In further mentioning the details of conditions which may give rise to vertigo and consequent loss of control solely attributable to visual perception—"viewing objects in rapid or irregular motion, such as storm driven clouds, waves, masses of water tumbling over a fall or pouring through a flume . . . irregular illumination and motion of objects alone . . . the common or field variety of 'movie' headache and dizziness . . . a swinging mirror," he again evidences being in complete accord with the views of the chief surgeon and his staff in perceiving the possibility of the aviator suffering disaster attributable to misinformation from visual illusions or unusual stimulations. In this connection, he has laid himself open to the charge of being inconsistent, however, since his article intones the importance and reliability of visual information concerning orientation of oneself in the air without sounding a note of warning against the ever present possibility of being brought to disaster by visual illusion or misinformation, and in the same article he states that "normal labyrinths merely supply the possibility of vertigo and false sensations of direction and space." It is equally true of all the special senses that sensory illusion and misinformation are always possibilities, and cognizance of the conditions apt to result in such illusions and misinformations should be very carefully taken in the effort to safeguard the aviator as fully as possible. It is manifestly as absurd to say "normal labyrinths merely supply the possibility of vertigo [which is only the sensing of motion not in accord with fact] and false sensations of direction and space," and that "one might even venture the paradox that the safest aviators would be those with dead labyrinths," as it would be to call attention to what he has just mentioned previous to this statement of the possibility of normal eyes being the medium of bringing to their possessor illusions or misinformation only, and to proceed with the observation that therefore the safest aviators would be those lacking eyes. It is unnecessary for him to assure me that this is not his thought, and I beg him to forgive me for even alluding to it; but I felt that it was worthy of mention in passing, since he had opened the subject, as quoted.

He asks the question, "Just how much of a handicap is a dead labyrinth for accurate and delicate balancing?"

I am fortunately in position to answer that question in this way: A series of examinations of the functional activities of the labyrinths of whirling dancers, head balancers, equilibrists, tight and slack wire performers, and various other circus and vaudeville stunt performers has been made by numerous observers, and findings in these examinations are on record in the Medical Research Laboratory. In each case, these artists were found to be possessed of full normal vestibular acuity. It seems unnecessary to attempt to adduce arguments in favor of the desirability of the aviator, the whirling dancer, the equilibrist, and the like, possessing at least approximately normal sense organ equipment of the four special senses cooperating to furnish man with information concerning motion. It is difficult to decide which, if any, could be dispensed with without leaving him less adequately equipped to indulge in such delicate and accurate motor coordinations as are necessary to the successful execution of flying, balancing stunts and whirling dances.

I feel very strongly that Dr. Fridenberg's statement that "the body position is brought into correspondence with a *visually* sensed standard, in this case a vertical line," and that "if the standard chosen is false, if the line is not exactly vertical, error will be manifested," is not entirely correct. It is my profound conviction, and I find that it is also the conviction of others with whom I have discussed this point, that the correlation of all incoming information in the sensory and psychic sensoria of normal man would result in the discovery that the vertical visual sense standard was false, through the intermediation of deep sensibility sensing the direction of the pull of gravity, which would result in the normal individual being made aware of the falsity of the visually selected vertical standard by reason of its failure to be in accord with the deep sensibility information as to the direction of the pull of gravity, which is always vertically downward; and that subconscious correction would be made and error thus not be manifested, but avoided.

Among the subjects occupying the special attention of the Medical Research Board, in connection with the study of the physical welfare of the flier, is the special sense of deep sensibility, and the associated voluntary and involuntary motor coordinations and control of the body in accord with afferent impulses from this tract. Recognition was accorded long ago to the fact that this sense plays an important part in the execution of body movements and controls incidental to maintaining balance. In observing that "these factors . . . have been almost entirely neglected in favor of a one sided and exclusive attribution to the labyrinth of balance control functions," it is again apparent that we are in accord concerning our conception of the importance of things in general, and that Dr. Fridenberg is again the victim of unfortunate misinformation as to the scope of the work of the medical examiner of the Aviation Service (compare Tests 19 and 21, Blank 609, A. G. O.).

Particularly apropos is his quotation of the letter from an American aviator in France, describing his own sensations in flight when unable to see, and dependent on his labyrinthine balance sense:

> While in the air at about 700 meters, some low hanging clouds blew down, enveloping me completely, and likewise losing me completely. For a half hour I wandered around vainly trying to get my bearings. . . . When you get into very thick clouds, it is impossible to tell whether you are in *ligne de vol*, that is, flying level, for there is no horizon visible to gage by. Frequently, an aviator will come out into clear space and find himself on the verge of a wing slip.

I cannot conceive any more convincing proof of the practical value of the service of the labyrinth and deep sensibility tracts than that contained in this quotation. This man was certainly deprived of any useful information coming along his visual tract during the time that he was utterly unable to see anything on account of the cloud. Yet, for half an hour he was able to wander around without meeting disaster, during which period he was thrown solely on the guidance of his balance senses. He certainly could not see, taste, smell or hear, or by touch feel where he was or in what position with relation to the pull of gravity he was, yet for half an hour some special sense succeeded in guiding him so safely that he avoided disaster. This seems to be eloquent testimony as to the practical value of normal balance senses.

Once more I find that Dr. Fridenberg and I are in accord concerning ideas as to visual requirements in his last paragraph. The question of hypersensitiveness to bright light, sharpness of the sense of motion, especially at the periphery of the retina, photometric variations within normal limits, and a variety of other special examinations of the visual function are in process of study, and standards for the aviation service are being developed at the Medical Research Laboratory.

EUGENE R. LEWIS, M.D., Mineola, L. I., N. Y.
Major, M. R. C., U. S. Army.

UNFAVORABLE SALVARSAN REPORTS—VERBOTEN

To the Editor:—I subtend a copy of a letter received day before yesterday. The letter is written on the stationery of O'Gorman, Battle & Vandiver, Attorneys and Counselors at Law, 37 Wall St., New York City:

May 22, 1918.

James C. Sargent, M.D.
Room 838, Wells Bldg.,
Milwaukee, Wis.

Sir:—We represent Mr. Herman A. Metz, President of the Farbwerke-Hoechst Co., distributors, under Federal License, of Salvarsan,

Mr. Metz directs us to call your attention to an article published over your signature in THE JOURNAL of the American Medical Association in its issue of March 30, 1918.

Mr. Metz directs us to inform you that the publication of this article and the statements therein were seriously damaging to the Farbwerke-Hoechst Co., and directs us to say further to you that he and the Corporation will hold you personally responsible for any repetition, oral or written, of the same or similar statements to the same effect.

He directs us to say further to you that the lot of Salvarsan received by you from the Farbwerke-Hoechst Company was tested before being sent you by Prof. Gies, by the United States Public Health Service and clinically in a New York hospital, and after the publication of your article ampules from the same lot were re-tested by the same parties and reported satisfactory, and that practically every physician who received some from the same lot made no adverse reports thereon.

Very truly yours,
(Signed) O'GORMAN, BATTLE & VANDIVER.

This I take to be a rather peculiar attempt at the solution of a scientific problem.

JAMES C. SARGENT, M.D., Milwaukee, Wis.

[EDITORIAL COMMENT:—A brief scientific article appeared in THE JOURNAL of March 30, 1918, by Dr. J. C. Sargent entitled "Toxicity of the American-made Arsphenamin (Salvarsan)." The article recorded untoward results following the injection of some Salvarsan made in New York by the former representative of the Farbwerke-Hoechst Co. of Germany. Dr. Sargent now receives the letter reproduced above. This attempt on the part of the Farbwerke-Hoechst Co. to control a scientific discussion of pharmacologic facts by intimidating physicians who would report facts that happen to be unfavorable to the product in which that concern has a proprietary interest will, doubtless, be appraised by American physicians at its face value. Possibly the Farbwerke-Hoechst Co. hold the Teutonic opinion that "Yankees" are "idiotic." They will find, however, that American physicians cannot be bulldozed into silence regarding the untoward effects of a proprietary remedy, even if that remedy did originate in Germany.]

Alcohol and Work.—Alcohol gives a sham sensation of added force and in reality decreases the ability to do work. Alcohol is the greatest cause of misery in the world, and as Cushny has put it, if alcohol had been a new synthetic drug introduced from Germany, its importation would long since have been forbidden. On the other hand, good beer makes poor food taste well. It also frequently leads to overeating. The cure for bad food is to have our daughters taught how to cook a decent meal. After that we can talk about prohibition. —Lusk, Food in War Time.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALABAMA: Montgomery, July 9. Chairman, Dr. S. W. Welch, State Capital, Montgomery.

ARIZONA: Phoenix, July 2. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.

CALIFORNIA: San Francisco, June 25. Sec., Dr. C. B. Pinkham, State Capitol, Sacramento.

COLORADO: Denver, July 2. Sec., Dr. D. A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: New Haven, July 9-10. Sec. Regular Bd., Dr. Chas. A. Tuttle, 196 York St., New Haven; Sec. Eclectic Bd., Dr. J. E. Hair, 728 State St., Bridgeport; Sec. Homeo. Bd., Dr. E. C. M. Hall, 82 Grand Ave., New Haven.

DELAWARE: Wilmington, June 18-20. Sec., Dr. H. W. Briggs, Wilmington, Del.

DISTRICT OF COLUMBIA: Washington, July 9-11. Sec., Dr. E. P. Copeland, The Rockingham, Washington.

FLORIDA: (E): Jacksonville, June 10-11. Sec., Dr. G. A. Munch, Tampa.

FLORIDA (Regular): Jacksonville, June 17-18. Sec., Dr. W. M. Rowlett, 812 Citizens Bk. Bldg., Tampa.

GEORGIA: Atlanta and Augusta, June 4, 5. Sec., Dr. C. T. Nolan, Marietta.

ILLINOIS: Chicago, June 3-7. Mr. F. C. Dodds, Supt. of Registration, Capitol Bldg., Springfield.

INDIANA: Indianapolis, June 13-15. Sec., Dr. W. T. Gott, 84 State House, Indianapolis.

IOWA: Iowa City, June 6-8. Sec., Dr. G. H. Sumner, Capitol Bldg., Des Moines.

KANSAS: Topeka, June 18-19. Sec., Dr. H. A. Dykes, Lebanon.

LOUISIANA: New Orleans, June 6-8. Sec., Dr. E. W. Mahler, 730 Audubon Bldg., New Orleans.

MAINE: Augusta, July 2-3. Sec., Dr. Frank N. Searle, 776 Congress St., Portland.

MARYLAND: Baltimore, June 18-22. Sec., Dr. J. McP. Scott, Hagerstown.

MICHIGAN: Ann Arbor, June 11-13. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MINNESOTA: Minneapolis, June 4-6. Sec., Dr. T. S. McDavitt, 741 Lowry Bldg., St. Paul.

MISSOURI: St. Louis, June 17-19. Sec., Dr. George H. Jones, State House, Jefferson City.

NEBRASKA: Lincoln, June 3-5. Sec., Dr. J. J. Hompes, 612 Sec. Mut. Bldg., Lincoln.

NEW HAMPSHIRE: Concord, June 24-25. Sec., Dr. W. T. Crosby, Manchester.

NEW JERSEY: Trenton, June 18-19. Sec., Dr. Alex. MacAlister, Trenton.

NORTH CAROLINA: Raleigh, June 24-28. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.

NORTH DAKOTA: Grand Forks, July 2. Sec., Dr. G. M. Williamson, Grand Forks.

OHIO: Columbus, June 4-7. Sec., Dr. H. M. Platter, State House, Columbus.

OKLAHOMA: Oklahoma City, July 9-10. Sec., Dr. J. J. Williams, Weatherford, Okla.

OREGON: Portland, July 2. Sec., Dr. Herbert S. Nichols, 802 Corbett Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 9-13. Sec., Dr. N. C. Schaeffer, State Capital, Harrisburg.

RHODE ISLAND: Providence, July 11. Sec., Dr. B. U. Richards, State House, Providence.

SOUTH CAROLINA: Columbia, June 11. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

SOUTH DAKOTA: Deadwood, July 9. Sec., Dr. P. B. Jenkins, Waubay.

TENNESSEE: Knoxville, Memphis and Nashville, June 14-15. Sec., Dr. A. B. DeLoach, Exchange Bldg., Memphis.

TEXAS: Austin, June 18-20. Sec., Dr. M. F. Bettencourt, Mart.

UTAH: Salt Lake City, July 1-2. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City

VERMONT: Burlington, June 10-12. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 18-21. Sec., Dr. J. W. Preston, Roanoke.

WASHINGTON: Tacoma, July 2. Sec., Dr. C. N. Suttner, 415 Old Nat'l Bldg., Spokane.

WEST VIRGINIA: Wheeling, July 9. Health Com., Dr. S. L. Jepson, Masonic Bldg., Charleston.

WISCONSIN: Milwaukee, June 25-27. Sec., Dr. J. M. Dodd, Ashland.

Wyoming February Examination

Dr. H. E. McCollum, secretary of the Wyoming State Board of Medical Examiners, reports the written examination held at Laramie, Feb. 6-8, 1918. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 5 candidates examined, 4 passed and 1 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Bennett Medical College	(1911)	75.9
University of Nebraska	(1904)	88.5
Ohio State University College of Medicine	(1917)	85.9
Vanderbilt University	(1887)	83.9
FAILED		
Starling Medical College	(1881)	*

* No grade given.

Massachusetts Service Examinations

Dr. Walter P. Bowers, secretary of the Massachusetts Board of Registration in Medicine, reports the special oral, practical and written examinations held for recent graduates eligible for war service, at Boston, Feb. 12-13, and March 12-13, 1918. The examinations covered 13 subjects and included 70 questions. An average of 75 per cent. was required to pass. Sixty-eight candidates were examined, all of whom passed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Georgetown University	(1917)	82.5
Harvard University	(1918)	75.4, 76.3, 76.8, 77, 77.1, 77.6, 78.5, 78.9, 79, 79.3, 79.5, 79.5, 79.5, 79.6, 79.6, 79.7, 80.2, 80.5, 80.7, 80.7, 80.9, 81, 81.5, 81.5, 81.6, 81.7 81.9 81.9, 82.2, 82.5, 82.6, 82.9, 83.5, 83.7, 84, 84.2, 85.2, 89.5.
Tufts College Medical School	(1918)	75, 75, 75.1, 75.7, 76.5, 76.6, 76.7, 77.3, 77.8, 78.4, 78.8, 78.8, 79, 79.1, 79.5, 79.6, 79.7, 80.3, 80.6, 80.7, 80.7, 81.1, 81.1, 81.5, 81.7, 81.9, 82, 82.7, 84.

Massachusetts March and Special Examinations

Dr. Walter P. Bowers, secretary of the Massachusetts Board of Registration in Medicine, reports the oral, practical and written examination held at Boston, March 12-14, 1918. The examination covered 13 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 63 candidates examined, 49, including 6 osteopaths, passed, and 14, including 6 osteopaths, failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Columbian University	(1893)	82
Rush Medical College	(1900) 84.6; (1904)	75
Bowdoin Medical School	(1907)	75
Maryland Medical College	(1908) 75; (1911)	82
Boston University	(1916)	75
College of Physicians and Surgeons, Boston	(1910)	75.7
Harvard University	(1917) 82, 84.1; (1918)	79.7, 80.2, 81.5, 82.4, 83.4, 83.7, 83.8, 85.2, 85.3, 86.7, 87.
Tufts College Medical School	(1917) 77.1, 77.5; (1918)	75, 75, 75.2, 77.3, 77.3, 78.2, 78.5, 78.7, 79, 79.5, 79.9, 80.2, 80.3, 81.2, 82.9, 83.1.
Detroit College of Medicine	(1895)	77.2
Washington University	(1908)	81.1
Columbia College in the City of New York	(1893)	82.8
Cornell University	(1915)	85.8
FAILED		
College of Physicians and Surgeons, Baltimore	(1902)	66.2
College of Phys. and Surg., Boston	(1915) 65; (1916)	69.5, 70.6
Tufts College Medical School	(1918)	67, 72.9
Meharry Medical College	(1915)	72.3
University of West Tennessee	(1916)	63.7

Dr. Bowers also reports that special examinations for war service were held at Boston, Jan. 17 and Jan. 29, 1918, at which three candidates were licensed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Harvard University	(1916) 82.2; (1917)	82.5
University of Oklahoma	(1917)	80

Minnesota April Examination

Dr. Thomas S. McDavitt, secretary of the Minnesota State Board of Medical Examiners, reports the written, oral and practical examination held at Minneapolis, April 2-4, 1918. The examination covered 15 subjects and included 80 written questions. An average of 75 per cent. was required to pass. Sixteen candidates were examined, all of whom passed. Five candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Rush Medical College	(1916) 86; (1918)	91
Harvard University	(1918)	91
University of Minnesota	(1917) 84; (1918)	84, 85, 87, 88, 88, 89, 89, 89, 90, 92, 94.
John A. Creighton Medical College	(1917)	90

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Chicago Homeopathic Medical College	(1900)	N. Dakota
College of Physicians and Surgeons, Chicago	(1905)	Arkansas
Kentucky School of Medicine of Louisville	(1898)	Indiana
Southern Homeopathic Medical College	(1902)	Maryland
Washington University	(1916)	Missouri

Rhode Island April Examination

Dr. Byron U. Richards, secretary of the Rhode Island State Board of Health, reports the practical and written examination held at Providence, April 4-5, 1918. The examination covered 7 subjects and included 70 questions. An average of 80 per cent. was required to pass. Of the 6 candidates examined, 4 passed and 2 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Harvard University	(1918)	84.7, 87.5, 88
Tufts College Medical School	(1918)	86.1
FAILED		
Maryland Medical College	(1913)	77.2
Tufts College Medical School	(1918)	77.8

Social Medicine, Medical Economics and Miscellany

THE EVOLUTION OF THE BULLETIN OF THE CHICAGO HEALTH DEPARTMENT

W. A. EVANS, M.D.

Chicago

In 1903, a well known secretary of a state board of health, in conversation, spoke disparagingly of the bulletin of the Chicago Health Department. He thought it undignified. He did not approve of its bid for public attention. His own report was of the orthodox type—pages of tables of statistics.

The Chicago bulletin of the last ten years makes the bulletin of 1903 look very conservative, yet practically every health department is now issuing bulletins of the same general type as that issued by Chicago.

Chicago's gross death rate fell below 15 per thousand in 1900 and has remained below that line since. For cities situated geographically as Chicago and with approximately Chicago's distribution of population, a death rate persistently somewhat below 15 per thousand may be considered as on a normal level. It is not without significance that Chicago reached this level several years in advance of other cities with which it may properly be compared.

To my mind, a considerable part of this achievement is due to the fact that Chicago very early saw the advantage of going to the people through its health department bulletin and other publications. It will be of interest, therefore, to study the evolution of the bulletin.

In 1870, Dr. John H. Rauch gathered up the loose material relative to early health work in Chicago, publishing it in "Chicago's Sanitary History from 1833 to 1869." Since 1870, the health department has published an annual report, but it has frequently happened that several annual reports were combined in a single volume. These annual reports were statistical in character and were evidently intended solely for health departments and libraries. In 1911, a report comprising annual reports for 1907, 1908, 1909 and 1910 was issued. This report differed from the others in that it contained much of material for public education in addition to the charts, diagrams and tables found in preceding reports.

The annual reports, however, are of far less interest than the bulletin. The evolution of the latter publication is interesting from several standpoints. Outside of the annual report, the first periodical publication of the Chicago Health Department, the ancestor of the present bulletin, that I have been able to find was dated July, 1890. It is a four-page quarto publication. Its title was "Health Department, Condensed Statement of Mortality." Two pages were given to vital statistics, one to meteorological summary and one to the title. I have not been able to find any copies of numbers issued between July, 1890, and January, 1894.

The issue of January, 1894, was also a four-page quarto, the title being the same as that of July, 1890. The arrangement differed in that the lower half of the first page was given over to vital statistics, the lower half of the third page to a meteorological summary, and the fourth page to educational propaganda. The propaganda articles dealt with smallpox, water, milk and a few other subjects. There was a ward map of the city on this page. Page 2 and the upper part of page 3 were devoted to statistics. This arrangement of the bulletin continued through the year, except that the contents of the fourth page gradually became statistical in character.

January, 1895, the title was changed to read, "Department of Health, City of Chicago, Bureau and Division Reports." During that year the bulletin was a two-page statistical report carrying nothing except vital statistics. The January and February, 1895, numbers had three pages of statistics showing the work of the different bureaus. One and a half pages were devoted to statistics of deaths, and the meteorological data reappeared.

In the March, 1896, number the educational page reappeared. In this number also we find charts, one of which showed the sanitary quality of the water supply by months, the other, the typhoid and diarrhea mortality rates.

In the May number, the fourth page was entitled, "Notes and Comments by the Assistant Commissioner." Dr. F. W. Reilly was the assistant commissioner. In August an effort was made to solve the midwifery problem. The fourth page of the bulletin gave the names and addresses of obstetricians willing to answer calls for assistance from midwives. In 1897, the same arrangement was followed. The June number contained an editorial on the "First Year's Work on Medical Inspection of Chicago Schools." By autumn, the bulletin had become a booster for "the healthiest large city in the world."

In 1898 the same plan was followed. The leading educational article in the July number was on "Development of Sanitary Science—the Daily Press as a Potent Auxiliary." In the fall of 1898, there was an epidemic of meningitis in Chicago. The October bulletin, in addition to the usual four pages of matter, had an additional four pages on meningitis.

In 1899, the arrangement continued the same, except that the space given to educational matter other than statistics was increasing, month by month. In June, 1899, the title was changed to read, "Department of Health, City of Chicago, Monthly Bulletin." The educational portion now occupied six pages and came first in the publication. This was followed by four pages of statistics. The August, 1899, number devoted four pages to an analysis of the water situation and demonstrated that the drainage canal was not lowering the level of the lake. After August, for the the remainder of 1899, there did not appear to be any more educational matter carried in the bulletin. The publication consisted of only four pages of statistics and was entitled, "Bureau and Division Reports." The first numbered bulletin was that of December, 1899. It was numbered Vol. VI. No. 12.

The issues from January to September, 1900, inclusive, entitled, "Department of Health, City of Chicago, Bureau and Division Reports," consisted of four pages of statistical matter. The October number again consisted of two portions. The first, termed "Monthly Bulletin," was devoted to the housing problem, and was written by Dr. A. R. Reynolds, health commissioner. The December number also had a section entitled "Monthly Bulletin." It contained a study of self-purification of streams by Dr. Reynolds.

From January to July, 1901, the bulletin was issued in two parts, "the Monthly Bulletin," educational in purpose, and a separate "Bureau Reports," statistical in character. In the latter half of that year, the title "Monthly Bulletin" was retained, but the bulletins generally consisted of four quarto pages containing statistics, mostly vital statistics, and a few editorial comments. Chicago's rather famous vaccination creed appeared for the first time in this year.

The bulletin seems to have been wholly discontinued in 1902. July 5, 1902, a weekly statement under the title "State of Chicago's Health" was begun. It appeared in every Chicago English daily paper. It varied from a half column to two columns and carried mortality statistics, a short list of the causes of death, and some educational matter. Nov. 8, 1902, the title was changed to "State of Chicago's Health, Bulletin of the Health Department," No. 45.

This plan of a weekly article in the daily papers was continued throughout 1903 and 1904. The plan was to write the article at the end of the statistical week—Saturday noon—and send it at once to the Chicago *Record-Herald*. This paper set it up and furnished galley proofs to the other papers and to the department. The department kept a file of its galley proofs. The data consisted of vital statistics and educational propaganda material. The matter was set in newspaper editorial type, and was arranged on a double column galley with the words "State of Chicago's Health" extending in large letters across the two columns.

Jan. 13, 1906, the bulletin became a four-page octavo pamphlet. The first page was given over to the title, "City of Chicago Bulletin of the Department of Health, Charles J. Whalen, Commissioner, 1906." The second page was headed, "State of Chicago's Health, Bulletin of the Health Department, week ended January 13, 1906, Vol. IX, No. 2." It contained two pages of educational propaganda material and a statement of mortality figures for the week, arranged on the short cause list. Most of these weekly bulletins consisted of two pages of printed matter, though by the spring of 1907, some of them had shrunk to one brief page. The plan followed in the department was to send the matter over to the *Record-Herald,* which set it up, furnished galley proofs to the other papers, and supplied the department with the matrix from which it printed its edition. The department paid messenger fees, cost of metal and a few incidentals.

Aug. 3, 1907, the bulletin underwent a most radical change. The title page of that number read:

> Physicians and others interested in the Bulletin may have it sent free of charge to their respective addresses on receipt of request to that effect. Bulletin Chicago School of Sanitary Instruction, devoted to the dissemination of advice and information of the Department of Health, City of Chicago, W. A. Evans, Commissioner, Vol. I, New Series No. 1; Vol. X, Old Series, No. 31, August 3, 1907. Published every Saturday by the School of Sanitary Instruction. Application made at Chicago, Illinois, for entry as second-class matter.

Vol. I, No. 5, Aug. 31, 1907, changed the last item to read, "Entered at Chicago, Ill., as second class matter."

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Book Notices

Lecithin and Allied Substances. The Lipins. By Hugh Maclean, M.D., D.Sc., Lecturer on Chemical Pathology, St. Thomas' Hospital, London. Boards. Price, $2.25 net. Pp. 206. New York: Longmans, Green & Co., 1918.

This is another member of the valuable series of Monographs on Biochemistry, which have constituted such an important contribution to the literature of biologic chemistry and the related sciences. That the war has not prevented its publication is a credit to the publishers, and indicates that our allies are not permitting the light of science to die out during the conflict. In this series the properties of fats in general have been covered by Leathes, the present volume developing the subject of its title, which Leathes had considered only briefly. The fact that apparently every living cell contains lecithin and other fatlike substances of this class is sufficient evidence that they are of vital importance in vital processes, and hence of prime interest to all interested in biologic process, whether as physicians or biologists. These substances are referred to in medical literature with growing frequency, and yet Maclean finds it necessary to state that little or nothing is known with certainty of their physiologic function. This indicates that time has failed to corroborate the innumerable hypotheses that have been advanced as to their rôle in biology, pharmacology and immunology.

This book emphasizes to the reviewer the hope that when the war is over, and time is available for the contemplation of more essential matters, some international council may be formed to secure a uniform nomenclature for that group of substances variously designated as fats, lipoids, lipins, etc. Even if our knowledge does not permit of perfection in selecting the proper names for each substance, let us at least agree on the labels we give them, and all use the same label for the same substance. Maclean's book adds further confusion to the nomenclature by arbitrarily applying the term "lipin" to certain substances in this group, although this term has been used by preceding writers in a totally different sense. No matter if the prevailing usage is open to criticism, the entirely arbitrary application of the same term to a more restricted class can lead to nothing but confusion, and is to be deplored, especially since this book, like the rest of the series, will be universally used as the best available source for up-to-date information concerning the subject it covers.

Physicians will be particularly interested in the discussion of the function of the lecithin group, toward which the author takes an extremely conservative view, even denying the generally accepted hypothesis that lecithin plays a part in the Wassermann reaction. As to their alleged chief functions, he says:

> In practically every case it will be seen that the evidence adduced is capable of explanation in other ways than the one usually adopted, and on the whole it is not too much to say that the biological significance of the lipins is so far a closed book. There is hardly a statement made on this problem by one investigator, which is not contradicted by some other observer, and the whole subject, in so far as experimental difficulties permit, requires thorough reinvestigation. From the physical point of view the colloidal nature of the lipins is of importance in regulating certain processes in the cell; the presence of unsaturated fatty acids in the molecule is also suggestive, since the chemical reactivity of the molecule is thereby increased.

The Examination of Milk for Public Health Purposes. By Joseph Race, F.I.C., City Bacteriologist and Food Examiner, Ottawa. Cloth. Price, $1.75 net. Pp. 224. New York: John Wiley & Sons, 1918.

This volume is intended for those in charge of the examination of milk for the protection of the public health. It is not, however, a mere laboratory manual. In fact, some of the methods are given in a way that would be intelligible only to an experienced worker. There are excellent critical discussions of a variety of tests serviceable at times in a public health laboratory, as well as the various chemical and bacterial tests employed in routine work. The discussions of analytic methods are preceded by chapters dealing with the composition of milk. The book is noteworthy for its concise presentation of the problems arising in milk examination.

Medicolegal

Liability for Gangrene

(Perry v. Rancourt et al. (Me.), 102 Atl. R. 233)

The Supreme Judicial Court of Maine overrules a motion by defendant Rancourt for a new trial after the plaintiff recovered a verdict against him of $8,192.40 for alleged malpractice in the treatment of a fracture of what was described as the lower left leg, caused by a fall on a sidewalk. The court says the plaintiff alleged that the defendants did not use proper care and skill in reducing the fracture, but bandaged his leg and put on a plaster cast so tightly as to impair the circulation of blood in his leg and foot, and allowed the cast to remain on so long that the foot and leg became gangrenous and in so diseased a condition that, on account of the defendants' negligence, his leg had to be amputated at a point nearly up to the body. That the plaintiff's leg had to be amputated on account of the development of gangrene from some cause was conceded by everybody. The plaintiff contended that the evidence was sufficient to show that the gangrene resulted from the negligence and unskilful treatment of the defendants. The defendants combated that contention, not only on the ground that the treatment was proper but also on the theory that the bacillus, called a gas bacillus, which produced the gangrene in this case could not have been generated by continued pressure of the cast.

The contention of the defendants that they were not negligent as to the pressure of the cast and the length of time they kept it on the leg was purely a question of fact for the jury, and without quoting the evidence on this branch of the case at all, the court is of the opinion that the finding of the jury on this question cannot be disturbed. But the defendants said that, even if the cast was kept on the leg as claimed, it did not produce the gangrene which necessitated the amputation of the leg. They based this contention purely on the theory that the type of gangrene here found could not be produced by pressure. From the testimony of all the physicians, however, it was fully established that continued pressure sufficient to stop the circulation might produce gangrene. There was, moreover, before the jury a definite assignable cause for gangrene in the plaintiff's foot below the cast. Against this was presented the theory that the symptoms found in this case, namely, the appearance of gangrene above the cast, could not be produced by the pressure of the cast, but by a form of bacteria called the gas bacillus. The physicians, as usual in such cases, were in conflict in regard to the cause. The jury evidently believed in the facts, instead of the bug. The court cannot say that they were wrong.

The fact that the jury found a verdict against Dr. Rancourt only, could not be regarded as an adequate reason for setting aside the verdict. On the evidence, a finding that the other physician was acting in the capacity of an assistant could not be disturbed. As to negligence, it appeared that he warned Dr. Rancourt that he "was binding that pretty tight, and that probably he would have to remove it the next day."

The verdict was large; but the injury was also very great. The court cannot say the finding of the jury was excessive.

Remedies Relative to Mosquitoes and Malaria

(Pruitt et al. v. Bethell (N. C.), 93 S. E. R. 945. Chesapeake & O. Ry. Co. v. Catlett (Va.), 94 S. E. R. 934)

The Supreme Court of North Carolina, in the case of *Pruitt et al.* v. *Bethell*, affirms a judgment in favor of the plaintiffs, who asked for the abatement as a nuisance of a dam and pond on the defendant's land because they created conditions in which anopheles mosquitoes were bred in large numbers, which infected the plaintiffs and their tenants with germs of malarial fever. The court says that the defendant contended that a public nuisance cannot be abated in a civil action by a private individual, without showing some special damage to the plaintiff; that the state alone can abate a public nuisance in the absence of special damage to the individual, and pointed out that the jury had found that there was no damage shown contents of the fourth page gradually became statistical in character.

January, 1895, the title was changed to read, "Department of Health, City of Chicago, Bureau and Division Reports." During that year the bulletin was a two-page statistical report carrying nothing except vital statistics. The January and February, 1895, numbers had three pages of statistics showing the work of the different bureaus. One and a half pages were devoted to statistics of deaths, and the meteorological data reappeared.

In the March, 1896, number the educational page reappeared. In this number also we find charts, one of which showed the sanitary quality of the water supply by months, the other, the typhoid and diarrhea mortality rates.

In the May number, the fourth page was entitled, "Notes and Comments by the Assistant Commissioner." Dr. F. W. Reilly was the assistant commissioner. In August an effort was made to solve the midwifery problem. The fourth page of the bulletin gave the names and addresses of obstetricians willing to answer calls for assistance from midwives. In 1897, the same arrangement was followed. The June number contained an editorial on the "First Year's Work on Medical Inspection of Chicago Schools." By autumn, the bulletin had become a booster for "the healthiest large city in the world."

In 1898 the same plan was followed. The leading educational article in the July number was on "Development of Sanitary Science—the Daily Press as a Potent Auxiliary." In the fall of 1898, there was an epidemic of meningitis in Chicago. The October bulletin, in addition to the usual four pages of matter, had an additional four pages on meningitis.

In 1899, the arrangement continued the same, except that the space given to educational matter other than statistics was increasing, month by month. In June, 1899, the title was changed to read, "Department of Health, City of Chicago, Monthly Bulletin." The educational portion now occupied six pages and came first in the publication. This was followed by four pages of statistics. The August, 1899, number devoted four pages to an analysis of the water situation and demonstrated that the drainage canal was not lowering the level of the lake. After August, for the the remainder of 1899, there did not appear to be any more educational matter carried in the bulletin. The publication consisted of only four pages of statistics and was entitled, "Bureau and Division Reports." The first numbered bulletin was that of December, 1899. It was numbered Vol. VI, No. 12.

The issues from January to September, 1900, inclusive, entitled, "Department of Health, City of Chicago, Bureau and Division Reports," consisted of four pages of statistical matter. The October number again consisted of two portions. The first, termed "Monthly Bulletin," was devoted to the housing problem, and was written by Dr. A. R. Reynolds, health commissioner. The December number also had a section entitled "Monthly Bulletin." It contained a study of self-purification of streams by Dr. Reynolds.

From January to July, 1901, the bulletin was issued in two parts, "the Monthly Bulletin," educational in purpose, and a separate "Bureau Reports," statistical in character. In the latter half of that year, the title "Monthly Bulletin" was retained, but the bulletins generally consisted of four quarto pages containing statistics, mostly vital statistics, and a few editorial comments. Chicago's rather famous vaccination creed appeared for the first time in this year.

The bulletin seems to have been wholly discontinued in 1902. July 5, 1902, a weekly statement under the title "State of Chicago's Health" was begun. It appeared in every Chicago English daily paper. It varied from a half column to two columns and carried mortality statistics, a short list of the causes of death, and some educational matter. Nov. 8, 1902, the title was changed to "State of Chicago's Health, Bulletin of the Health Department," No. 45.

This plan of a weekly article in the daily papers was continued throughout 1903 and 1904. The plan was to write the article at the end of the statistical week—Saturday noon—and send it at once to the Chicago *Record-Herald*. This paper set it up and furnished galley proofs to the other papers and to the department. The department kept a file of its galley proofs. The data consisted of vital statistics and educational propaganda material. The matter was set in newspaper editorial type, and was arranged on a double column galley with the words "State of Chicago's Health" extending in large letters across the two columns.

Jan. 13, 1906, the bulletin became a four-page octavo pamphlet. The first page was given over to the title, "City of Chicago Bulletin of the Department of Health, Charles J. Whalen, Commissioner, 1906." The second page was headed, "State of Chicago's Health, Bulletin of the Health Department, week ended January 13, 1906, Vol. IX, No. 2." It contained two pages of educational propaganda material and a statement of mortality figures for the week, arranged on the short cause list. Most of these weekly bulletins consisted of two pages of printed matter, though by the spring of 1907, some of them had shrunk to one brief page. The plan followed in the department was to send the matter over to the *Record-Herald*, which set it up, furnished galley proofs to the other papers, and supplied the department with the matrix from which it printed its edition. The department paid messenger fees, cost of metal and a few incidentals.

Aug. 3, 1907, the bulletin underwent a most radical change. The title page of that number read:

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Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Archives of Ophthalmology, New Rochelle, N. Y.

May, 1918, 47, No. 3

1 Eye in Nervous Disease. W. A. Holden, New York.—p. 221.
2 Case of Leukosarcoma of Iris, Treated by Radium. S. Gifford, Omaha.—p. 241.
3 Focal Infection as a Probable Cause of Exophthalmic Goiter. J. Dunn, Richmond, Va.—p. 248.
4 Return of Tension and Occurrence of Retrochoroidal Hemorrhage After Trephining. A. Knapp, New York.—p. 256.
5 Focal Infections of Eye from Intestinal Tract. J. G. Dwyer, New York.—p. 261.
6 Light Pupillary Reflex; Case of Unilateral Argyll-Robertson Pupil, in which Consensual Reaction Existed in Both Eyes. A. Lutz, Havana.—p. 266. To be concluded.

Archives of Pediatrics, New York

April, 1918, **35**, No. 4

7 *Baby That Cannot Take Milk. T. W. Clarke, Utica.—p. 193.
8 Differential Diagnosis of Enlargements of Cervical Lymph Nodes. R. S. Haynes, New York.—p. 226.
9 Work of Adolescent Clinic of Stanford University Medical School. A. E. Gates, San Francisco.—p. 236.

7. Also published in the *New York State Journal of Medicine*, April, 1918.

American Journal of Orthopedic Surgery, Boston

May, 1918, **16**, No. 5

10 *Problem of Disabled. R. Jones. England.—p. 273.
11 Fractures of Femoral Neck. Plea for Optimism in Treatment. S. J. Hunkin, San Francisco.—p. 291.
12 *Operation which, in Selected Cases of Infantile Paralysis of Long Standing, Causes Return of Power in Paralyzed Muscles; Report of Cases. C. Riely, Baltimore.—p. 300.
13 Wounds of Knee Joint. K. Emerson, England.—p. 311.
14 Pathology of Peripheral Nerve Injuries. S. M. Cone, England. —p. 319.
15 *Tendon Transplantation to Stabilize Hip Joint. R. M. Yergason, Hartford, Conn.—p. 323.

10. **Problem of Disabled.**—Jones is convinced that no ministry was ever created with greater responsibilities, or greater powers for good, than the British Pensions Ministry. It is in a position literally to save England after the war is won. As it has been decided that, for military reasons, soldiers after discharge and while they are undergoing training shall not be under army control, the Pensions Ministry has not the power to compel the pensioner to undergo training. It has certain powers which enable it to put pressure on the pensioner in order to enforce training and treatment. If treatment is refused, short of operation, the pension is reduced. Moreover, bonuses are given to men who train, in addition to their full pension, and if they are married separation allowance. Many pensioners will require treatment for two or more years. This treatment can be carried on while the man works or trains.

12. **Return of Power in Paralyzed Muscles.**—The operation described by Riely was not undertaken with the idea that muscle power could be restored, but as a means of mechanically aiding the patient in walking, and prevent the necessity of so much bracing. Incisions are made over the highest points of origin and over the point of insertions of the paralyzed muscle or muscles that allow the greatest deformity. Holes are drilled through the bones at these points, straight or curved, as the case requires. Then one end of heavy paraffined braided silk is passed through the hole at the origin and tied so that it cannot slip; the other end of the silk is threaded in a long bodkin-like carrier, which is passed into the muscle sheath on the side next to the skin and along the course of the muscle, out through the incision at the point of insertion. The instrument is then unthreaded and the silk passed through the hole in the bone at the point of insertion; the deformed part or parts being forced into a normal standing position, the string is drawn tightly and thoroughly tied. The incisions are closed, preferably by subcutaneous sutures, and the cast applied with the deformity in an overcorrected position. In ten days the cast is removed, the sutures taken out, and the cast renewed with the overcorrected position retained. The second cast should be left on at least three, if not four months, as a shorter time seems not to be sufficient for the holes in the bones to heal thoroughly enough not to give way or leak. Where the muscle that is to be relieved has a tortuous course, it sometimes is necessary to make other incisions at the points of some of the curves where they are too sharp to let the cord carrier pass. These cords should be as many ply as the stress put on the normal muscle would require.

In applying casts after these operations, great care must be taken to shorten the distance between the origins and insertions of all overstretched paralyzed muscles, and to increase the distances betwen the origins and insertions of all relaxed paralyzed muscles. Strong tensions on contracted active muscles should also be avoided as much as possible. This can be done best by fixing the affected parts in positions of flexion, extension, adduction, abduction, or a combination of these, as the case requires. The operation still being in the experimental stage, Riely is still uncertain just when to clip or remove the strings, even after the deformity has been overcome and power regained. As a result of past experience, it is his opinion that, in most cases, it is safe and proper to delay this removal for three years. Removal, or clipping of the strings, is a very simple procedure.

15. **Tendon Transplantation to Stabilize Hip Joint.**—Yergason suggests the transplantation of the tendon of origin of the semimembranosus muscle. This strong, flat tendon is set free by blunt dissection, as far up as possible beneath the long head of the biceps and as far down as the point at which it joins the muscle belly. At this level it is cut across. The upper end of the wound is next retracted, the biceps being drawn inward and the gluteus maximus strongly upward. Well under the outer margin of the biceps, and a short distance below the tuber ischii, the tendon of the semimembranosus is again identified and set free. The freed and transected tendon is now drawn up from beneath the biceps and the dissection continued upward to the tuber ischii. Then two thirds the distance from the top of the great trochanter to the lower border of the insertion of the gluteus maximus, the bone is exposed through a small cut in the overlying tissues. At this point a hole is drilled through the gluteal ridge (postero-external border) of the femur, in an oblique direction, from without inward and upward. The hole so made is elongated downward to form a slit, the length of which should equal the width of the tendon it is to receive. The end of the freed tendon is drawn through the opening, pulled tight, turned back, and sutured to itself. The fleshy belly of the semimembranosus, or the remnant of its tendon, is fastened to the deep surface of the semitendinosus by two or three chromic catgut sutures, and tied gently. The deep fascia is sutured and the skin incision closed. A cast should be worn for at least one month, during which time no strain should be allowed to come on the tendon. A brace from the axillae to the knee may then be substituted and, by bending this slightly, the strain of the erect posture may be gradually shifted from it to the transplanted tendon.

Boston Medical and Surgical Journal

May 9, 1918, **178**, No. 19

16 Meningococcus Carriers; Preliminary Report from First Naval District. W. R. Redden, Chelsea.—p. 623.
17 With the Royal Army Medical Corps in France. M. A. Harrington, New York.—p. 631.
18 Hospitals and Vocational Training. R. P. Borden, Fall River.—p. 634.
19 Spontaneous Pneumothorax Complicating Pulmonary Tuberculosis. H. F. Gammons, Carlsbad, Texas.—p. 637.

Bulletin of Johns Hopkins Hospital, Baltimore

May, 1918, **29**, No. 327

20 *Results of Treatment in Pernicious Anemia. A. Bloomfield, Baltimore.—p. 101.
21 Tobacco Smoke and Pulmonary Tuberculosis. A. K. Krause. —p. 106.

20. **Results of Treatment in Pernicious Anemia.**—A series of fifty-seven cases is analyzed in detail by Bloomfield with

particular reference to the comparative value of various methods of treatment. Twenty-eight cases were treated by the older methods consisting essentially of rest in bed, diet, hydrochloric acid, and arsenic. Bloomfield points out that absolute rest in bed over considerable periods of time is the most important feature of this regimen. Arsenic and hydrochloric acid are apparently useless, unless the patient is kept quiet at the same time, and cessation of improvement or relapse has occurred not uncommonly as soon as active life was resumed, despite continued drug therapy. Arsenic was used in every instance in this series either in the form of Fowler's solution, sodium cacodylate, or arsphenamin. Analysis of the cases, however, yields no data of value as to its efficacy. Achlorhydria gastrica was uniformly present and hydrochloric acid was given usually both before and after meals. In a few instances gastro-intestinal disturbances, especially diarrhea, seemed to be relieved, but in most of the patients these symptoms disappeared quite rapidly with the progress of the remission apparently regardless of any symptomatic therapy. Twenty-six patients received transfusions of blood varying in number from 1 to 17. The largest amount of blood given to one patient was 8,700 c.c., the smallest amount was 300 c.c. The single transfusions varied in amount from 300 to 900 c.c. The citrate method and the Lindeman syringe method were used most often; in a few cases indirect transfusions of defibrinated blood were given, and in one case direct transfusion was used as a preliminary to splenectomy. Six patients (23 per cent.) died. Of the twenty-two cases not transfused and receiving only general therapy, five, or 22.7 per cent., died. Transfusion was of no value as an emergency measure, nor was the immediate mortality decreased by the procedure. Following the injection of 500 c.c. or more of blood there was usually an immediate increase in the blood count and hemoglobin.

Subjective improvement was often striking, the patient saying he felt better while the blood was being injected. Among the patients who were not transfused remission set in in the hospital eight times in twenty-eight admissions, a percentage of 28.5; in the patients given transfusion there were nineteen remissions in thirty-seven admissions, or 51 per cent. It seems that in patients who are not in a stage of the disease refractory to any form of treatment, remission has come on more often when transfusion has been performed. Furthermore, the amount of blood gained runs roughly parallel to the number of transfusions and the total amount of blood given. It seems rational, therefore, if transfusion is done at all, to be prepared to inject blood repeatedly if the patient shows a tendency to respond. Single transfusions in cases refractory to other therapy led to no improvement in this series. No relation between the amount of blood given and the duration of the remission is apparent. Thirteen of the patients receiving transfusion are now dead, four are alive, while the remainder could not be traced. It is clear from Bloomfield's analysis that there was no demonstrable prolongation of life in the cases in which transfusion was employed. The patients living longest were not the ones in whom remission followed transfusion.

An analysis of the course of symptoms shows no definite variation in the groups of cases treated by different methods. Splenectomy was performed in eight instances. In one, death from pulmonary embolus occurred nineteen days after operation. Six of the remaining patients are dead. In no case was the clinical picture essentially altered, and no unusual prolongation of life occurred. In twelve cases a thorough study of the nose, throat, sinuses, teeth, gastro-intestinal tract, and lower urinary tract was made for foci of infection and, when found, these were eliminated. All these patients finally received clean bills of health from the various specialists. Most of them were given transfusions and in one case splenectomy was also performed. In none was there any feature in the subsequent course to distinguish them from the group in which foci were not found, or if found were not treated, either as to total duration of life or extent and degree of remission. It is unlikely, therefore, that such foci of infection are the cause of pernicious anemia, although it seems wise to treat them for their own sake as well as for any possible general beneficial effects which may follow.

California State Journal of Medicine, San Francisco

May, 1918, **16**, No. 5

22 Regulation of Practice of Medicine in California since 1914. H. E. Alderson, San Francisco.—p. 232.
23 Arthroplasty of Hip Joint, Murphy Method; Report of Four Cases. J. M. Burlew, Santa Ana.—p. 237.
24 Amebiasis; Its Radical Cure with Combined Emetin and Salvarsan Products. H. Gunn, San Francisco.—p. 240.
25 Acute Gastroduodenal Perforations. E. Butler, San Francisco.—p. 245.
26 Control of Epidemic Meningitis at U. S. Naval Training Station, San Diego. F. L. Kelly, Berkeley.—p. 247.
27 Treatment of Warts. D. W. Montgomery and G. D. Culver, San Francisco.—p. 250.
28 Nitrobenzol Poisoning. F. F. Gundrum, Sacramento.—p. 252.
29 Etiology and Symptomatology of Chronic Suppurative Otitis. A. B. Baer, San Francisco.—p. 253.
30 Prevention and Treatment of Localized Muscular Contractures. A. Gottlieb, San Francisco.—p. 254.
31 Arch Defects of Human Foot. E. H. Smith, San Francisco.—p. 256.
32 Gonorrhea in Women. W. E. Stevens, San Francisco.—p. 260.

Journal of Infectious Diseases, Chicago

May, 1918, **22**, No. 5

33 Immunité et Anaphylaxie. J. Danysz, Paris.—p. 427.
34 Demonstration of Micrococci in Bones in Rickets and Scurvy. L. Jackson, Chicago.—p. 457.
35 *Bacteriology and Immune Reactions of Rubeola (Measles) and Rubella (German Measles). R. Tunnicliff, Chicago.—p. 462.
36 *Toxicity of Pneumonic Lungs. C. Weiss, J. A. Kolmer and E. Steinfield, Philadelphia.—p. 469.
37 *Toxic Substances from Virulent Pneumococci and Pneumonic Lungs and Influence Thereon of Quinin and Urea Hydrochlorid, Ethylhydrocuprein Hydrochlorid, and Other Cinchona Derivatives. S. S. Cohen, C. Weiss and J. A. Kolmer, Philadelphia.—p. 476.
38 *Chemotherapy of Experimental Pneumococcus Infection. J. A. Kolmer and E. Steinfield, Philadelphia.—p. 492.
39 'Leukopenia and Leukocytosis in Splenectomized Rabbits. C. W. Wells, Chicago.—p. 502.
40 Acid Production at Partial Oxygen Tension and Under Aerobic Conditions by Bacillus of Typhoid Dysentery Group. W. W. Oliver and O. C. Perkins, Brooklyn.—p. 507.
41 Differentiation of Paratyphoid Enteritidis Group. IV. E. O. Jordan, Chicago.—p. 511.
42 Influence of Oxidizing Substance (Sodium Iodoxybenzoate) on Catalase Value of Blood and Tissues. A. Arkin and E. B. Fink, Morgantown, W. Va.—p. 515.

35. **Bacteriology and Immune Reactions of Measles.**—The special points of interest in Tunnicliff's work were: the almost constant presence of a diplococcus in the blood of measles patients during the preeruptive and eruptive stages; its presence alone and in large numbers before the appearance of the eruption and alone also in a large proportion of cases at the height of the infection, and its presence at the same time in the throat, nose and eyes. Cocci similar to those found in these blood cultures were found in sections of the lung and kidney in one fatal case of measles; in the lung and bronchial lymph gland of another, and in the gangrenous tongue of a third. They appear singly, in pairs and chains. Some are found inside of leukocytes. The cocci in these sections varied considerably in size. Similar blood cultures were made from ten rubella patients. A fairly large diplococcus was observed in the anaerobic cultures in seven of these ten cases. A diphtheroid bacillus was isolated twice from anaerobic cultures. Throat smears and cultures on aerobic blood-agar plates from six cases showed diplococci similar to those isolated from the blood. Various immunity tests have been made with the cocci isolated from rubeola and rubella to determine if any antibody reaction could be demonstrated. So far opsonins have been the only antibodies found in any appreciable amount. The serum of twelve measles patients was examined, in six only once as the eruption was beginning to fade, in six usually daily throughout the course of the disease. Four of these serums showed a negative phase of one, two, two, and five days' duration, respectively. A distinct rise in opsonins for the measles organism occurred in each case as the symptoms subsided and the eruption disappeared. This rise lasted from one to four days. The point of opsonic extinction for normal blood was 1:30; for measles serum 1:15 during the negative phase and from 1:60 to 1:340 during the rise. The various strains isolated from the blood, throat, nose, eye and ear of measles patients gave similar results.

36. **Toxicity of Pneumonic Lungs.**—Salt solution extracts of pneumonic lung in the stage of gray hepatization were found to be more toxic for animals than similar extracts of normal lung tissue. The method of extraction influenced the toxicity of both extracts. Lethal doses of extracts of both pneumonic and normal lung injected intravenously usually produced anaphylactic symptoms. Sterile extracts of pneumonic lung in dogs removed forty-eight hours after intrabronchial insufflation of virulent pneumococci, were more toxic than similar extracts of lung consolidated by intrabronchial insufflation of sterile aleuronat, and both were more toxic than extracts of equal weights of normal dog lung. The toxicity of extracts of normal and pneumonic lung is decreased by heating, drying and filtration through Berkefeld filters. Extracts of human pneumonic lungs in gray hepatization were frequently hemolytic for guinea-pig cells, whereas similar extracts of normal human and dog lungs and of dog lungs consolidated from intrabronchial insufflation of virulent pneumococci and sterile aleuronat, were generally nonhemolytic. The hemolytic activity of these extracts was neutralized by antipneumococcus serum as well as by normal rabbit serum; reduced by heating and drying, and usually completely removed by porcelain filtration. One extract of a human pneumonic lung in gray hepatization was found to partly neutralize the agglutinating activity of an antipneumococcus serum. The nature of the toxic and hemolytic substance or substances in extracts of pneumonic lung is unknown; it is probably allied with the protein fractions and may be partly responsible for the production of the various systemic symptoms of lobar pneumonia ascribed to toxemia.

37. **Action of Quinin, etc., on Pneumotoxin.**—The following summarizes the authors' work: Pneumococci when dissolved in sodium choleate liberate a preformed endocellular toxin which is lytic for erythrocytes. Different preparations of the pneumotoxin vary considerably in their toxicity for guinea-pigs, mice and rats. The hemolytic power of the pnemotoxin was inconstant and not always concomitant with the degree of toxicity. Quinin and urea hydrochlorid, ethylhydrocuprein hydrochlorid, and other derivatives of cinchoma were found to exert no influence on either the toxicity or the hemolytic activity of pneumotoxin. Therapeutic doses of quinin bisulphate, quinin hydrochlorid and particularly quinin hydrobromid prolonged to a recognizable extent the lives of animals receiving one minimum lethal dose of pneumonic lung extract. Quinin and urea hydrochlorid and ethylhydrocuprein hydrochlorid had slight inhibitory effect on the hemolytic activity of the lung extracts when large, hemolytic doses of the drugs were used. Quinin hydrochlorid, quinin hydrobromid, quinin bisulphate, and hydroquinin hydrochlorid behaved in a reverse way, exhibiting marked inhibition in nonhemolytic doses and no inhibition in hemolytic doses. Neither pneumococcus protein nor pneumonic blood was found to have any neutralizing action on the toxicity of quinin salts for animals. Neither the clinically beneficial action of cinchona derivatives in the pneumonias nor the increased quinin tolerance of pneumonia patients receives elucidation from the experiments reported; the results being largely negative.

38. **Chemotherapy of Experimental Pneumococcus Infection.**—The ordinary soluble salts of mercury and numerous new mercurial compounds were found by Kolmer and Steinfield to be without appreciable effect in prolonging the lives of mice infected with a dose of Type I pneumococcus culture lethal within seventy-two hours. The results of their experiments indicate that ethylhydrocuprein hydrochlorid by subcutaneous injection in doses without protective value, usually increase the protective value of antipneumococcus serum Type I in a slight but definite manner in severe infections of mice and rats with homologous pneumococci. Several of the commoner compounds of quinin, as quinin and urea hydrochlorid, quinin bromid, and quinin chlorohydrosulphate, given subcutaneously in doses without any appreciable influence on severe and fatal pneumococcus infections, occasionally increase the protective power of antipneumococcus serum but to a lesser extent and less regularly than ethylhydrocuprein hydrochlorid. Ordinary salts of mercury subcutaneously did not increase the protective value of antipneumococcus serum; several new synthetic compounds of mercury were generally without effect on the protective power of the serum in severe experimental infections.

Kentucky Medical Journal, Bowling Green

May, 1918, **16**, No. 5

43 Surgical Management of Hypertrophy of Prostate. H. H. Grant, Louisville.—p. 193.
44 Precancerous Lesions. I. Abell, Louisville.—p. 198.
45 Precancerous State and Increase of Cancer. A. H. Barkley, Lexington.—p. 203.
46 Early Diagnosis and Treatment of Ectopic Gestation. C. A. Vance, Lexigton.—p. 207.

Laryngoscope, St. Louis

April, 1918, **28**, No. 4

47 Index-Medicus and Digest of Otolaryngology, 1917.

Medical Record, New York

May 11, 1918, **93**, No. 19

48 Treatment of Tuberculosis. G. E. Bushnell, Washington, D. C.—p. 793.
49 Stammering. A. J. P. Pacini, New York.—p. 800.
50 Preliminary Report of Use of Ozonized Chlorinated Oil of Eucalyptus. J. T. Schell, Philadelphia.—p. 806.
51 Indigocarmin Used Intravenously for Locating Ureteral Orifices in Tuberculous Cystitis. S. P. Martin, Buffalo.—p. 808.
52 Treatment of Flatfoot. L. Mayer, New York.—p. 811.

Michigan State Medical Society Journal, Grand Rapids

May, 1918, **17**, No. 5

53 Oral Sepsis. C. T. Pankhurst, North Star.—p. 183.
54 Evolution of Nursing. E. I. Carr, Lansing.—p. 186.
55 Case of Cicatricial Ectropion Corrected by Plastic Operation. G. Slocum, Ann Arbor.—p. 189.
56 Case of Enormous Postoperative Ventral Hernia. L. L. Bottsford, Ann Arbor.—p. 191.
57 Syphilitic Paralysis of Fifth Cranial Nerve. C. D. Camp, Ann Arbor.—p. 194.

Military Surgeon, Washington, D. C.

May, 1918, **42**, No. 5

58 Gunshot Fractures of Long Bones of Extremities. H. Frost.—p. 505. To be continued.
59 Analysis of Problem of Infection. J. L. Stoddard and S. C. Harvey.—p. 518.
60 Shell Shock. E. K. Johnstone.—p. 531.
61 Few Civil War Hospitals. C. Wood.—p. 539.
62 *Study of Comparative Number of Successful Vaccinations by Cross Scarification and Incision Methods. E. D. Kremers.—p. 549.

62. **Study of Successful Vaccinations.**—Kremers' investigation has convinced him that the method of incision is the only vaccination method which should be used in the military and naval services. It should be the method of choice for all vaccinations. The cross scarification method gives a slightly higher percentage of primary "takes" than the incision method and a reduced higher percentage of total "takes" (revaccinations included) in unprotected persons. Of the total "takes" 87.1 per cent. were secured in 257 unprotected men by the incision method against 92.4 per cent. in 225 unprotected men by the cross scarification method. The percentage of "takes" secured by the incision method is sufficient when carefully done to prevent epidemics of smallpox. The slightly higher percentage of "takes" secured by the cross scarification method is offset by the increased number of infections which follow this method.

Minnesota Medicine, St. Paul

May, 1918, **1**, No. 5

63 Conservation of Hearing. H. Newhart, Minneapolis.—p. 161.
64 Tumors of Bladder and Their Nonoperative Treatment. W. F. Braasch, Rochester.—p. 168.
65 Treatment of Epidemic Cerebrospinal Meningitis. T. L. Birnberg, St. Paul.—p. 174.
66 Absolutely Necessary Microscopic Diagnosis. W. C. MacCarty, Rochester.—p. 178.
67 Physiology of Corpus Luteum. E. T. Hermann, Minneapolis.—p. 181.
68 Elephantiasis; Report of Case. A. N. Bessesen, Minneapolis.—p. 185.

Missouri State Medical Association Journal, St. Louis

May, 1918, **15**, No. 5

69 Etiology of Alopecia Areata Neurotica. J. Grindon, St. Louis. —p. 145.
70 Recruiting for Navy. E. A. Brookes, St. Louis.—p. 148.
71 Fractures of Femur. J. McH. Dean, St. Louis.—p. 153.
72 Binet Tests and Problem of Feebleminded. E. E. Liggett, Owsego, Kan.—p. 157.
73 Malta Fever; Report of Case. R. A. Woolsey, St. Louis.—p. 164.
74 Apparatus for Making Fluororoentgenography. A. G. de Weal, St. Louis.—p. 166.

Modern Hospital, St. Louis

May, 1918, **10**, No. 5

75 Hotel Dieu of Blois. K. de Monclos, Paris, France.—p. 313.
76 New Building for Easton Hospital, Easton, Pa. W. S. Michler and S. S. Goldwater, New York.—p. 317.
77 Standards for Children's Hospital. S. McLean, New York.—p. 324.
78 Animal Foods, Their Composition and Fuel Value. J. P. Street, New Haven, Conn.—p. 329.
79 Nurses' Home of Norton Memorial Infirmary. A. Loomis and J. Hartman, Louisville, Ky.—p. 331.
80 How Great Clinic Works. J. A. Hornsby.—p. 333.
81 Cragmor Sanatorium, Colorado Springs. I. Morton, Colorado Springs, Colo.—p. 336.
82 Bookkeeping for Small Hospitals and Allied Institutions. H. K. Carter and C. A. Porter.—p. 341.
83 Volunteer in Outpatient Work. C. H. Smith, New York.—p. 344.

New Jersey Medical Society Journal, Orange

May, 1918, **15**, No 5

84 Treatment of Fibroid Tumors of Uterus with Radium. H. A. Kelly, Baltimore.—p. 145.
85 Electrodiagnosis in Industrial Accidents, War Wounds and Affections of Motor Apparatus. G. B. Massey, Philadelphia.—p. 146.
86 Treatment of Long Standing Suppurations in Arthritis and Osteomyelitis. E. Z. Holt, Atlantic City.—p. 149.

New Orleans Medical and Surgical Journal

May, 1918, **70**, No. 11

87 Medical Aspects of Gallbladder Disease. C. L. Eshleman, New Orleans.—p. 823.
88 Gastro-Intestinal Aspects of Gallbladder Disease. S. K. Simon, New Orleans.—p. 827.
89 Surgical Aspects of Gallbladder Disease. J. M. Batchelor, New Orleans.—p. 831.

New York Medical Journal

May 11, 1918, **107**, No. 19

90 Bacteriologic Study of Cigars. R. C. Rosenberger, Philadelphia. —p. 865.
91 Some Phases of Endocrinology. W. V. P. Garretson, New York. —p. 866.
92 The Unconscious. A. Stern, New York.—p. 869.
93 Diatheses in Children. A. Hymanson, New York.—p. 872.
94 How the Health Department May Aid in Diagnosis and Treatment of Meningitis. J. B. Neal, New York.—p. 876.
95 Relation of Carbohydrates to Protein Synthesis. N. W. Janney, New York.—p. 879.
96 Case of Tumor of Cerebellopontine Angle. E. D Friedman, New York.—p. 884.
97 Immunization Against Colds. J. G. Dwyer, New York.—p. 885.

Oklahoma State Medical Association Journal, Muskogee

May, 1918, **11**, No. 5

98 Some Frequent Obstetric Procedures—Conservative and Vicious. W. A. Fowler, Oklahoma City.—p. 143.
99 Antrum. W. E. Dixon, Oklahoma City.—p. 145.
100 Varied Topics of Surgical Interest. F. L. Watson, McAlester.—p. 148.
101 Tuberculosis of Kidney. D. N. Eisendrath, Chicago.—p. 150.
102 Eugenics. J. W. Lynes, Byron.—p. 153.

Surgery, Gynecology and Obstetrics, Chicago

May, 1918, **26**, No. 5

103 *Management of Renal Tuberculosis; Report of Cases. H. G. Bugbee, New York.—p. 479.
104 Peotien found, B. Deaver, Philadelphia.—p. 489.
nent of Certain Types of Uterine Hemorrhage
105 *lly received clea roids. C. J. Miller, New Orleans.—p. 495.
of Various Forms of Cystocele
Most of them of End-Results of Various Forms of Cystocele
ectomy was aleliminary Report. L. Broun and R. M. Rawls,
502.
the subse Acid Secretion Accompanying Ulcer of Stomach
n which m and Changes Following Operation. A. O.
either as lw York.—p. 506.
Tia; Report of Cases and Review of Literature.
ation. bcowitz, New York.—p. 514.
Are the constant Accompaniment of Cholecystitis. E. A.
to treago.—p. 521.
110 Cas gene hage Secondary to Nephrolithotomy. J. Frank,
Chi 8.

111 *Entrance of Air into Mediastinum During Operations on Base of Neck. C. G. Buford, Chicago.—p. 540.
112 Problems in Abdominal Surgery. T. J. Watkins, Chicago.—p. 543.
113 Fetal Death During Labor. C. B. Reed, Chicago.—p. 545.
114 Interstitial Pregnancy. Adenomyoma of Rectovaginal Septum; Report of Case. A. H. Curtis, Chicago.—p. 551.
115 Interilio-Abdominal Amputation; Report of Three Cases. W. W. Babcock, Philadelphia.—p. 554.
116 New Method of Tying a Surgical Knot. A. R. Grant, Utica, N. Y.—p. 559.
117 *Modification of Ahlfeld Method for Determining Maturity of Fetus in Utero. H. Thoms, New Haven, Conn.—p. 563.
118 Excision and Suture of Superficial Gunshot Wounds Under Local Anesthesia. S. Brock, France.—p. 565.
119 Case of Chorio-Angiopagen. I. Ayora, Quito, Ecuador.—p. 568.
120 *Treatment of Cystocele and Uterine Prolapse During Childbearing Period. T. J. Watkins, Chicago.—p. 570.

103. **Renal Tuberculosis.**—Bugbee's analysis shows that while the active tuberculous process in the kidney has been arrested and walled off, still this is not the rule, the lesion being progressive. Even when arrested, a kidney the site of poorly drained cavities is a menace to the system. Therefore, nephrectomy for unilateral renal tuberculosis is the proper treatment. With the means at hand by which we can often make an early and accurate diagnosis of renal tuberculosis, and with statistics showing that 75 per cent. of the cases of unilateral infections are cured by nephrectomy, the tendency is to be too optimistic as to the future in these cases. They should all report regularly, be watched and treated as cases of general tuberculosis.

105. Abstracted in The Journal, July 14, 1917, p. 144.

111. **Entrance of Air into Mediastinum.**—In the treatment of this condition Buford feels that free ventilation of the room and oxygen are indicated, that possibly digitalis products are beneficial. In the graver cases venesection offers us more relief than anything else. If after venesection there is still no relief, incision of the anterior mediastinum has been recommended in somewhat parallel conditions. The wisdom of this is debatable because it is possible that instead of relieving tension more air might be admitted and the symptoms aggravated. This question needs to be settled by animal experimentation. If incised the edges of the wound should be kept apart by stiff rubber drains or other methods, but at no time should gauze be used for that purpose because its meshes fill with blood and soon plug the wound. It also remains to determine by experimentation what, if any, relief may be obtained by very slow aspiration of the anterior mediastinum through needle puncture.

117. **Modification of Ahlfeld Method.**—The modification of the Ahlfeld method proposed by Thoms may be described as follows: The patient is placed in the lithotomy position for the ordinary vaginal examination. The examination may be conducted either vaginally or rectally. If the head is high up and cannot be reached per rectum the vaginal route becomes necessary. If, however, the vertex can be palpated at all per rectum the rectal route becomes preferable not only on account of the lessened danger of infection but because the examining finger is in the extension of a line corresponding to the axis of the fetus in utero.

120. **Treatment of Cystocele and Uterine Prolapse.**—Briefly Watkins' procedure consists of a wide incision anterior to the cervix, free separation of the herniated part of the bladder, closure of the hernial opening by circular sutures, restoration and fixation of the urethrocele, and perineorrhaphy are essential features in the operation. Amputation of the cervix, trachelorrhaphy, plastic surgery on the broad ligaments, and vaginal fixation of the round ligaments are adjuncts which can be utilized as necessary.

Texas State Journal of Medicine, Fort Worth

May, 1918, **14**, No. 1

121 Full Term Ectopic Pregnancy with Operation Eight Months Later. E. Mathis, Austin.—p. 13.
122 Case of Osteitis Fibrosa Cysticus, Involving Shaft of Right Femur and Right Tibia. R. L. Ramey, El Paso.—p. 16.
123 Why Not Circumcise Girl as Well as Boy? B. C. Eskridge, Houston.—p. 17.
124 Most Effective Treatment of Lower Extremity Deformities Due to Anterior Poliomyelitis. H. F. Connally, Waco.—p. 20.
125 Diagnostic Significance of Malnutrition in Gastric and Intestinal Disturbances. E. V. DePew, San Antonio.—p. 21.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Tuberculosis, London

April, 1918, **12**, No. 2

1 State Control of Tuberculosis. F. Kincaid.—p. 77.
2 Domiciliary Treatment of Tuberculosis. O. Holden.—p. 81.

Bulletin of Canadian Army Medical Corps, Ottawa

April, 1918, **1**, No. 2

3 *War Edema (Kriegsoedem) and Bilateral Parotid Enlargement. F. A. Park.—p. 18.
4 Liquid-Tight Closure and Treatment of Wounds. W. H. Taylor and N. B. Taylor.—p. 19.
5 Exercise in Treatment of Weak Feet. H. R. Smith.—p. 23.
6 Eye Injuries from Broken Eyeglasses. P. G. Bell.—p. 26.

3. **War Edema and Bilateral Parotid Enlargement.**—Park says that this is a condition so peculiarly German that to give it an English name would accuse us of want of chivalry. Over and above this, to speak of the condition as "war edema" is incorrect; it is not war but purposeful underfeeding that is the primary cause. It is a famine edema, not a war edema. This disease occurred among the prisoners of all nationalities who were fed on German rations only. Kriegsoedem is the result of underfeeding, especially in fat and protein. It can be cured easily in the early stages by sufficient diet. When well established it is frequently complicated by a colitis, when the mortality is high. The condition commences as slight edema of the feet and legs, disappearing when the patient is recumbent. Patients are seldom admitted to the hospital in this stage, although proper feeding with rest in bed would completely restore them in a few days. The usual type found in the hospital presents a massive edema of feet, legs, thighs, and scrotum, with some puffiness under the eyes. Ascites is common. The patient is pale and dull; indeed, the appearance is strikingly like that of a case of parenchymatous nephritis. There is extreme muscular wasting and weakness. Dyspnea is only present on exertion, except when there is hydrothorax. The heart is slightly enlarged; the action is regular, but usually slow; the muscle tones are poor, and the second aortic sound is not accentuated. Blood pressure is low. There are commonly many moist râles in the lungs posteriorly, especially toward the bases. Uncomplicated cases are afebrile. In the most serious cases there is a general anasarca, the chest and abdominal parietes are edematous, and all the serous sacs become filled with fluid. In one case Park removed 15,000 c.c. of watery fluid from the pleural sacs in a series of six punctures during two weeks. In a few cases paracentesis abdominis was done. Hydropericardium was common, but never extensive enough to require withdrawal.

Park also saw some twenty cases of a condition of enlargement of the parotid glands which was always bilateral. The enlarged glands were at no time hard or painful, but rather they were soft and doughy, the swollen regions being easily pinched between the finger and thumb. The condition was afebrile; in no uncomplicated case did Park encounter rise of temperature in association with it. It was never accompanied by orchitis, and it tended to persist indefinitely.

Indian Journal of Medical Research, Calcutta

January, 1918, **5**, No. 3

7 Laboratory Findings in Three Indian Cases of Cerebrospinal Fever. R. Knowles and V. B. G. Armytage.—p. 441.
8 Case of Malaria Showing Atypical Parasites. F. W. Cragg and G. K. Naidu.—p. 458.
9 *Intravenous Use of Quinin Acid Hydrobromid in Malaria. R. Knowles.—p. 463.
10 Occurrence of Negri Bodies. J. W. Cornwall.—p. 478.
11 Occurrence of Hyphomycetic Elements in Ulcers of Skin in Nineteen Cases. E. D. W. Greig and G. C. Maitra.—p. 481.
12 "Critical Remarks" on "Study of Entamebic Cysts by Knowles and Cole." S. L. Brug.—p. 491.
13 Prevalence of Bovine Tuberculosis in Punjab. G. Taylor.—p. 497.
14 Simple, Rapid and Accurate Method of Classifying Statistical Data. A. G. McKendrick.—p. 510.
15 Trematode Parasite of Anopheline Mosquitoes. M. B. Soparkar.—p. 512.
16 Mouth Parts of Ochromyia Jejuna, Predaceous Muscid. F. W. Cragg.—p. 516.
17 Method of Feeding of Corizoneura (Pangonia) Longirostris Hardwick, with Description of Mouth Parts. J. L. Mitter.—p. 523.
18 New Larviparous Philematomyia (Philematomyia Indica, n. sp.). P. R. Awati.—p. 529.

9. **Intravenous Quinin Acid Hydrobromid in Malaria.**—Knowles claims that the intravenous administration of quinin in concentrated solution is the quickest and surest method of immediately cutting short a febrile attack of malaria. It appears to be a perfectly safe method, and is infinitely preferable to intramuscular injections from every point of view. It cannot, however, be relied on to exterminate the malarial parasite from the patient's system, and should be supplemented either at the time of that attack or subsequently by an oral course of quinin. The special rôle of the intravenous method is in bilious remittent fever, in algid or comatose cases in delirium, and in relapses in old standing malarial patients. In cases of malaria, heptic deficiency is often a prominent feature, as shown by the frequency of the urobilin finding in the urine; while no matter how much quinin be given orally, gastric irritation may limit the amount which enters the circulation. Knowles, however, prefers its use as a routine measure during the febrile attack in all forms of malaria, either with or without simultaneous administration by the mouth. Even when no quinin can be given by the mouth the fever can be at once terminated by intravenous quinin; while other drugs are given orally to combat gastric and hepatic irritation. By the intravenous technic the drug reaches the circulation instantly in a known dose, its full force is at once exerted on the malarial parasites in the blood stream, while further, the excretion of drugs, after intravenous administration, is more rapid than after dosage by the mouth.

There is quite a sufficient volume of evidence now available to justify the routine and extended use of quinin intravenously. In many instances intravenous quinin can be depended on to save life. The most suitable solution is probably a 5 to 10 per cent. solution of the acid hydrobromid in normal saline, though further work is required on quinin urethane and colloidal quinin. For an adult five consecutive daily injections of from 7 to 10 c.c. are recommended. In a critical case a gram should at once be given intravenously. The injections should, so far as possible, be so timed as to coincide with the rising temperature or with the rigor. The method has been used in advanced pregnancy and also in a case of excessively severe dysmenorrhea without causing any distress to the patients.

Journal of Laryngology, Rhinology and Otology, London

April, 1918, **33**, No. 4

19 Otorhinolaryngologic Service in Italy. W. S. Bryant.—p. 97.
20 Report on Diseases of Ear, Nose, and Throat in Egypt from 1915. J. W. Barrett.—p. 100.
21 Two Cases of Middle Ear Suppuration with Complications. J. K. M. Dickie.—p. 106.
22 War Injuries and Neuroses of Otological Interest. C. E. J. Phillipson.—p. 111.
23 Results of Series of Investigations Based on Examination of One-Hundred and Ten Individuals with Regard to Time of Commencement and Duration of Nystagmus in Caloric Test. C. A. Swan and R. Lake.—p. 118.

Journal of State Medicine, London

January, 1918, **26**, No. 1

24 *Management of Neurasthenia and Allied Disorders Contracted in Army. J. Collie.—p. 2.
25 Civil Sanitation and War. E. W. Hope.—p. 18.

24. **Neurasthenia and Allied Disorders in Army.**—Neurologic centers have been established both by the French and English war departments immediately behind the fighting line. Here quick returns are the order of the day. The atmosphere in which a shell shocked soldier is treated, Collie says, is second only in importance to the personality of those who are to treat him. In these front line neurologic centers the treatment is more intensive, but the feature which distinguishes it from those employed at home is that the cases are taken, as it were red-hot from the battlefield and are moulded by the strong will of those specially selected for their treatment. Frequently men are returned to the fighting

line in two or three weeks. There is a special shock hospital for each army area. They are placed near the clearing hospitals, and are staffed by specially selected medical officers under the superintendence of a neurologist of repute. Here the case is investigated thoroughly, and if it is found that the man is not likely to recover soon he is sent to a base hospital, from which in time he may be transferred to England. Numbers of the men treated at these special hospitals are found after one, two or three weeks' treatment to have sufficiently recovered to be transferred to a local convalescent camp, where attention is specially paid to them as convalescent neurasthenics. Appropriate exercises are prescribed, and later on football and competitive games of skill are encouraged. In these special shock hospitals definite data of the reflex responses and other phenomena are being collected. In the advanced stations for dealing with these functional conditions the percentage of cure is very high, and the duration of the conditions is remarkably short. An immense proportion of this class of case is curable. Failures depend on the stubbornness, lack of will power, or refusal of further treatment by the patient.

A thorough physical examination followed by a definite assurance that no organic disease is present is a good foundation for the cure of functional disease. Reeducation is the keynote of the treatment for shell shock. A healthy and invigorating environment is everything. Massage, electricity, persuasion, occupation, light graduated work, fresh air, good wholesome food, and above all a healthy outdoor environment are essential adjuncts. The psychotherapeutic method of treatment has been found by experience to be wonderfully effective, provided only it is in the right hands. Persuasive conversations should be systematically arranged for, in which the patient and physician can have quiet talks, so that the man is led by tact and guarded sympathy to lay bare what is, as it were, at the back of his mind. Nothing in the nature of so-called psychanalysis is necessary. All patients should be isolated during the earlier part of their treatment. The calm restfulness of solitude has a peculiar effect in allaying irritability, and prevents morbid introspection. Isolation is not solitary confinement; a nurse is in frequent attendance. Electrical treatment for these cases is of value, but the stoutest advocates of this method will not deny that the effect is intimately associated with the mysteriousness of the electric current. Work in one form or another is the only salvation for those who are suffering from functional nerve disease.

In spite of the treatment afforded and the large number of cures effected, it is obvious that a very appreciable number of men have been so incapacitated by shell shock and kindred nerve injuries that they are not fit for any further military service and receive their discharge. There is a large residuum who have not yet recovered, who are wholly unable to earn a livelihood, and who obviously cannot recover without very specialized treatment. At the request of the Minister of Pensions Collie has undertaken the organization of homes of recovery in different parts of the country for the institutional treatment of ex-soldiers of this class. Two institutions, one accommodating 100 patients and the other fifty, have been opened, one in London and the other in Belfast, and a third is being arranged for in Manchester. The principal methods adopted in these remedial homes are: 1. An attempt is made to gain the confidence of the patient and teach him to believe that he will recover, and continuous and painstaking efforts are made to persuade him to adopt an optimistic frame of mind. 2. The application of the usual remedial methods, such as massage and electricity. 3. Outdoor work and recreation are insisted on.

Journal of Tropical Medicine and Hygiene, London

April 15, 1918, **21**. No. 8

26 Some Experiments with Fruit of Blighia Sapida in Nigeria. A. Connal and W. Ralston.—p. 81.

Archives des Maladies du Cœur, etc., Paris

March, 1918, **11**, No. 3

27 *Paroxysmal Tachycardia. L. Bard.—p. 97.
28 Paroxysmal Hemoglobinuria; Three Cases. L. Giroux.—p. 105.
29 Obliterating Arteritis. Carpentier.—p. 112.

27. **Disappearance of Murmurs During Paroxysmal Tachycardia.**—Bard reports two cases which warn that even the most pronounced of the orificial murmurs are liable to disappear during an attack of paroxysmal tachycardia, and thus mislead the examiner. Inorganic murmurs often accompany the continuous tachycardia with exophthalmic goiter, as also with simple nervous palpitations. But these inorganic murmurs do not belong to the habitual clinical picture of paroxysmal tachycardia. With this the heart beat is much faster than with ordinary tachycardias. He has witnessed the subsidence during the paroxysmal tachycardia not only of the signs of mitral stenosis but also the murmur of aortic insufficiency and even the murmur from perforation of the interventricular septum in an extremely characteristic case of Roger's disease. In examining the patient therefore, more than one examination is necessary, watching for attenuated signs of masked lesions. In one of the two cases described the man of 22 had no trace of a murmur during the several days of the paroxysm of tachycardia although he was known to have a perforation of the septum. In the other case the pronounced aortic murmur disappeared as the tachycardia set in.

Bulletin de l'Académie de Médecine, Paris

March 26, 1918, **79**, No. 12

30 *Bread Made Direct from Grain. Leprince, Lecoq and Doléris.—p. 264.
31 *Malarial Tremor. H. de Brun.—p. 269.
32 Bacteriologic Findings in Epidemic of Bacillary Dysentery. F. Bezançon and others.—p. 275.
33 *Spots in Eggs. Martel.—p. 277.
34 Heart Complications of Smallpox. P. Teissier.—p. 280.
35 Welfare Work for Tuberculous Soldiers. L. Bernard.—p. 282.

April 2, 1918, **79**, No. 13

36 *The Emotive Constitution. Dupré.—p. 286.
37 *Kala-Azar in Children in France. M. Labbé, Targhetta and Ameuille.—p. 288.
38 *Meningeal Hemorrhage in War Pathology. G. Guillain.—p. 290.

30. **Bread Made from Grain Without Grinding.**—See Paris Letter, p. 1391.

31. **Malarial Tremor.**—De Brun relates that tremor is noted in nearly every case of secondary malaria in his service. The tremor sometimes is so intense that it interferes with the man's work as a draftsman or painter and with writing and playing an instrument, but usually it is too slight to attract attention. The tremor varies in its intensity; in two of his cases, exaggeration of the tremor warned of an impending malarial attack. In the majority of cases it seems to be the expression of a toxi-infection, but in others some organic lesion is evidently responsible.

33. **Spots in Candled Eggs.**—Martel is chief of the Service vétérinaire sanitaire, and he here reports bacteriologic study of the spots seen in candling eggs. This does not reveal any change in color or taste, or slight infection of a fresh egg acquired during its development. But otherwise the findings with candling can be usually relied on.

36. **Autonomic Pathology of Emotivity.**—Dupré's views were summarized in de Fleury's article, of which an abstract was given, April 20, 1918, page 1194.

37. **Kala-Azar in Children.**—The two children presenting typical leishmaniosis were refugees from Serbia, but the disease had developed eighteen months after their arrival in France. They lived at Nice. The longest incubation known was in a 6 months babe. Leishmaniosis in dogs is known on the French coast of the Mediterranean.

38. **Meningeal Hemorrhages in War Pathology.**—Guillain emphasizes the danger of overlooking meningeal hemorrhages, especially with shell shock, etc. Besides the classic symptoms, headache, stiff neck, bradycardia, etc., meningeal hemorrhage should be suspected with cerebral excitation accompanied with mental confusion, a contralateral flexion reflex when pressure is applied to the femoral quadriceps, true defense reactions like those of the frog, pupil disturbances, and massive albuminuria in some cases. There may also be a sallowness from the local hemolytic processes. The products of the hemolysis may exert further a toxic action on the nerve centers and nerve roots.

Bulletins de la Société Médicale des Hôpitaux, Paris

Feb. 8, 1918, **42**, No. 5

39 Spontaneous and Recurring Chondrocostal Dislocation. J. Huber and P. Brian.—p. 131.
40 Traumatic Aneurysm in a Syphilitic. F. Ramond and L. Postina.—p. 132.
41 Cancer and Stones in Pancreas. J. Minet.—p. 135.
42 The Cerebrospinal Fluid in Beriberi. J. A. Sicard and H. Roger.—p. 137.
43 *Streptococci in Wounds. L. Ramond and C. Vergelot.—p. 142.

43. **Improved Technic for Cultivating the Streptococcus.**—Ramond and Vergelot comment on the importance of early detection of the streptococcus in war wounds as contraindicating primary suture. In 142 cases they found the streptococcus at 195 examinations, and invariably the course of the wound corresponded to what was anticipated from the presence of the streptococcus. The characteristic chains appear earlier and more certainly when Sacquépée's sodium albumin is added to ordinary bouillon. The streptococcus proliferates in this mixture before other bacteria, sometimes in three hours, and almost always in six, showing the typical chainlets. Using three to five loops instead of one, while reducing the culture medium to 0.5 c.c., aids further in hastening the development of the culture. The Sacquépée sodium albumin is prepared by mixing white of egg with three times its volume of distilled water, stirring constantly but without beating to a froth. To 1,000 c.c. of this mixture is added 5 c.c. of a 10 per cent. solution of sodium. After distributing in tubes it is sterilized at 110 C. for twenty seconds. One part of this, mixed with four parts of ordinary bouillon, is distributed in tubes in the proportion of 1 c.c. of the fluid to a tube 1 cm. in diameter. About 0.5 c.c. of the fluid is inoculated with three or five platinum loops of pus or serous fluid. The tube is kept at 37 C. and examined under the microscope the third and sixth hours or oftener. Positive findings were obtained in three hours in 80 per cent. of the positive cases; in 90 per cent. in less than six hours, and in 99 per cent. by the next day. They always made parallel tests with other culture mediums.

Paris Médical

March 23, 1918, **8**, No. 12

44 *Crippled Respiration. M. Labbé and L. Arié.—*p. 226.*
45 *Simple Technic for Transfusion of Blood. Rieux.—p. 229.
46 Focus of Autochthonous Malaria. P. Ravaut.—p. 232.
47 *Subacute Rat-Bite Disease. P. D'Halluin and J. Fiévez.—p. 234.

44. **Crippled Lungs.**—Labbé and Arié remark that the war has compelled us to regard the healing art from a new angle, namely, that we now have to consider first of all the future utilization of the man in military service and in civilian life later. They discuss here the men who are "lame," not in their legs, but in their respiratory passages. Before the war, these men sought easy, sedentary occupations, and their chronic bronchitis, suspicious apical findings or emphysema were not regarded as actual sickness; they merely wore a muffler on their way to work, and attended to business as usual. Under the vicissitudes of military service they have to be sent again and again to the infirmary for bronchitis, etc. The anatomic lesions in these cases are so minute that the complaints seem out of all proportion to them, and appreciation of the actual functional capacity of the man is a difficult matter. Only the regimental physician, seeing the man under various conditions of walking, running, and other military exercises, is able to estimate what the man can actually stand. The regimental physician should always be consulted in these cases. A change of service to the heavy artillery or aviation work, relieving the men of marching and much carrying, may be all that is necessary for these "air passages cripples." With weakness and anemia, the auxiliary service may be preferable. The lesion in these cases is not progressing, and there is every chance that exercise will improve instead of aggravating the condition. With active tuberculosis, on the other hand, even smaller lesions call for dismissal from the service, as any overexertion is liable to rouse or accelerate the progress of the bacillary lesion.

45. **Transfusion of Citrated Blood.**—Rieux has simplified the technic for transfusion; among other points, by using a trocar-needle to draw the blood without first exposing the vein. This renders the procedure so insignificant that several donors can be tapped for the needed amount of blood, instead of taking it all from one donor.

47. **Rat-Bite Disease.**—The woman of 49 had been bitten in a finger by a rat, and the glands in the axilla and above the clavicle became enlarged, with attacks of fever recurring during six months, with neurasthenia and loss of appetite. Under serotherapy (*sérum névrosthénique*), and 0.005 gm. sodium arsenate by the mouth, daily, the symptoms gradually subsided. The intervals between the febrile attacks were remarkably regular, practically always six and a half days, or multiples of this. Toward the last, urticaria developed; this does not seem to have been noted before in the European cases, but it is further proof of the identity of the disease in Europe and Japan. Quinin had absolutely no effect, and the recovery under two or three months of the arsenic may have been merely the self-limitation of the subacute infection. The disease is known after the bite of a weasel or ferret, and even from a mere sojourn in a rat infested environment (Dick and Rutherford).

Presse Médicale, Paris

March 18, 1918, **26**, No. 16

48 *Tests of Resisting Power of Blood Corpuscles. A. Chauffard and J. Huber.—p. 141.
49 *Rôle of the Periosteum. R. Leriche and A. Policard.—p. 143.
50 Quinin in Capsules that Do Not Dissolve in the Stomach. P. Ravaut.—p. 146.
51 Syphilis in Natives of Morocco. Lacapère.—p. 146.
52 The Abuse of Milk in Children's Diet. J. Comby.—p. 150.

48. **Resisting Power of Blood Corpuscles.**—Chauffard and Huber tested with various isotonic salt solutions the blood corpuscles from forty-four persons. Their findings confirm anew the immense importance of the phenomena of osmosis in the life of the cells, and the folly of regarding isotonic solutions as physiologically interchangeable. Too many factors are involved, and even although the isotonic osmotic tension is a protection for the living cell, this protection is only relative, and injurious chemical action is always possible. Of all the solutions tested, freshly prepared Ringer's fluid seemed to be the least harmful for the cells.

49. **Rôle of the Periosteum in Formation of Bone.**—Leriche and Policard declare that the periosteum should be regarded as a physiologic entity rather than from the standpoint of anatomy. Correctly managed, we can almost create bone at will from the periosteum. The balance and coordination between bone and periosteum are like those between the derma and the epidermis. Repair of bone requires always the cooperation of bone tissue and of the neighboring soft parts: It depends on the periosteum physiologically understood. There is no specific bone-producing layer between the bone and the fibrous stratum, and bone is not secreted, in the strict sense of the term. It forms by the junction of bone and the fibrous tissue, represented by the periosteum, the outer layer of the bone participating, as they show by microscopic views of newly proliferated bone. The new bone grows out like a tumor in the direction of least resistance, but there can be no bone growth from the periosteum unless the superficial layers of bone have been scraped off with the periosteum. In all cases of subperiosteal resection of bone, the detached periosteum appears as if covered with minute grafts, the grafts formed of vascularized bone scraps, the growth of which is limited by the fibrous tissue of the periosteum itself.

Progrès Médical, Paris

March 23, 1918, **33**, No. 12

53 Lipolysis and Bacteriolysis of the Tubercle Bacillus in Oil Medium. E. A. Bossan and E. Le Moignic.—p. 99.
54 Apparatus for Treatment of Fractured Knee or Ankle. *H. P.* Achard.—p. 100.
55 Heliotherapy for War Wounds. H. Vignes.—p. 102.
56 Roentgen Findings in Posterior Malleolus. P. Japiot.—p. 104.

March 30, 1918, **33**, No. 13

57 *Acquired Morbid Fear. P. Voivenel.—p. 107.
58 Cure of Hysteric Functional Disorders. M. Dide and R. Courjon.—p. 113.

57. **Morbid Fear.**—Voivenel presents arguments to show that a minute expert medicopsychologic examination should be provided when a previously brave and decided character

displays a tendency to cowardice after some wound or concussion or disease, or exceptional emotional stress. The court martial must accept the possibility of acquired pathologic fear.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Nov. 17, 1917, **47**, No. 46

59 Sahli's Volume Bolometry as Tested on the Healthy. D. J. da Cunha.—p. 1537.
60 Indications for Roentgenotherapy. M. Steiger.—p. 1554.

April 6, 1918, **48**, No. 14

61 Presence of Bacillus of Gas Phlegmon on Uniforms. B. Galli-Valerio.—p. 433.
62 Quinin and Urea Hydrochlorid as Local Anesthetic. Dumont.—p. 435.
63 War Gaseous Phlegmons. P. F. Nigst.—p. 438. To be continued.

April 13, 1918, **48**, No. 15

64 *Paradoxical Ankle Reflex as Sign of Organic Disease. R. Bing.—p. 465.
65 *Operative Cure of Cancer at Junction of Esophagus and Cardia. E. Bircher.—p. 467.

64. **The Paradoxical Ankle Reflex with Organic Disease.**—Bing found the reflex described in fourteen out of nineteen cases of organic spastic paralysis, while it was never present in 200 cases of psychoneuroses or nonspastic paralysis or in the healthy. The leg of the reclining patient is placed as for eliciting the foot clonus, that is, with moderate flexion in hip and knee joints, and the leg is lifted from the bed. The examiner's hand brings the ankle into slight extension (dorsal flexion), slightly stretching the Achilles tendon. Then with a broad and heavy reflex hammer a blow is struck at any point along the line of the ankle between the tips of the internal and external malleoli. With positive findings, there is a strong contraction in the gastrocnemius muscle while there is plantar flexion of the foot, at least as pronounced as with the Achilles tendon reflex. It is immaterial whether the blow hits the tendon of the tibialis anticus, extensor hallucis longus, or extensor digitorum communis. With a negative response there is no spasmodic contraction of the muscle, or only a weak extension spasm (dorsal flexion). This reflex was associated with the Babinski reflex in seven cases, and with foot clonus in seven. In one case of cerebral syphilis and three of war wounds of the cortex, this paradoxic or inverted reflex was the only pathologic reflex phenomenon that could be elicited.

65. **Cancer at Junction of Esophagus and Cardia.**—In analyzing his two successful cases and previous mishaps in others, Bircher has become convinced that the abdominal route offers the only guarantee of success. It is possible to draw the esophagus down into the abdominal cavity for from 4 to 7 cm. Witzel has drawn it down for 10 and even 14 cm. Bircher sutured the esophagus to the stomach according to the principles of a gastric fistula, Kader or Witzel, covering the exposed esophagus completely with peritoneum. A fistula into the stomach enabled the patients to be given nourishment from the first. One patient is still in good health over a year since the operation. The other after a period of comparative health succumbed to his valvular disease. In a third case, all was going well till the tenth day when—contrary to orders—food was given by the mouth. Vomiting followed, and the wound around the gastric fistula tore open, with fatal infection. Necropsy in these two cases showed ideal healing of the suture between esophagus and stomach.

Annali d'Igiene, Rome

March, 1918, **28**, No. 3

[illegible] Bacteriologic Diagnosis of Diphtheria. M. Pergola.—p. 101.
[illegible] Pseudo-Dysentery Bacilli. B. Maymone.—p. 111.
[illegible] Utilization of Cold in Destruction of Body Lice. I. Di Pace.—p. 130.
[illegible] Glanders in Felines. M. Carpano.—p. 138. Continuation.

Gazzetta degli Ospedali e delle Cliniche, Milan

March 14, 1918, **39**, No. 21

[illegible] [illegible]k of Liver as Sign of Typhoid. A. Campani and F. [illegible] [illegible] 205.

March 17, 1918, **39**, No. 22

[illegible] [illegible] the Liver and Insomnia. P. F. Arullani.—

70. **Liver Dulness in Typhoid.**—Lesieur called attention recently to an area of subdulness at the base of the right chest, which he called retrohepatic subdulness, and claimed it to be an early sign of typhoid. He found it pronounced in 80 or 90 per cent. of 300 typhoid cases, and others have confirmed this finding. Piazza stated that the area of dulness over the liver in the back extends normally from 3 to 5 cm. toward the left, but in typhoid it extends 6 or even 8 cm. to the left. Campani and Bergolli found this sign only in 40.7 per cent. of 105 typhoid patients, while on the other hand it was found in other morbid conditions. The probable explanation for it is some congestion in the lung, from reduced tonus of the vessels, plus the disturbance in the circulation in the region from the enlarged liver. The right lung rests on the solid base of the congested liver.

71. **The Liver and Insomnia.**—Arullani reports the case of a man of 52 who was under treatment for rebellious and extensive eczema. He had suffered for two years from a tendency to insomnia, but nothing else pathologic was known except that the liver was enlarged and the urine contained urobilin. Comparison of the day and night urine confirmed that the insufficiency of the liver became more pronounced at night, a cerebral toxemia resulting, this explaining the insomnia. The eczema was also traceable to the liver insufficiency, as was proved by the complete recovery under treatment addressed to the liver. (The therapeutic measures are not mentioned.)

Policlinico, Rome

March 31, 1918, **25**, No. 13

72 *Fate of Scraps of Metal in the Tissues. E. Calandra.—p. 293.
73 Congenital Displacement of Viscera. L. Coleschi.—p. 295.
74 Encysted Projectile below Diaphragm. C. Guarini.—p. 298.
75 Trochoscopy with War Surgery. A. Maffi.—p. 300.
76 A Year of War Roentgen Work. G. Benassi.—p. 303.

April 7, 1918, **25**, No. 14

77 *Bacillary Diarrhea. M. Ghiron.—p. 317.
78 Technic for Sending Blood for Analysis. S. Scigliano.—p. 319.

72. **Fate of Metal Scraps in the Tissues.**—Calandra has noted small zones of sclerosis of a grayish color, as the relics of a small scrap of metal in the tissues. The metal has disintegrated, but the gray sclerosis may cast a shadow suggesting a foreign body. He urges the importance of removing all the scraps of metal, as this metalization of the tissues can do only harm.

77. **Bacillary Diarrhea.**—Ghiron describes a bacillus found in sixty cases of diarrhea, which he cannot class with any of the known types.

Riforma Medica, Naples

Jan. 12, 1918, **34**, No. 2

79 *Epidemic Hemorrhagic Purpura. F. Giugni.—p. 22.
80 Ovariectomy in Severe Hysteria. N. Federici.—p. 30.

March 23, 1918, **34**, No. 12

81 Traumatology of the Liver. E. Aievoli.—p. 222.
82 Scurvy or Hemorrhagic Diathesis? S. Fichera.—p. 224.

79. **Hemorrhagic Purpura.**—Giugni describes the endemic-epidemic appearance of hemorrhagic purpura, suggesting scurvy, among the troops on the firing line in 1916. He compares the experiences in this line at various points, and discusses whether the mountain climate, the emotional stress acting on glands with an internal secretion, and defective diet may have brought on the disease, or whether we can accept as the cause the spirochete found by Siccardi in various hemorrhagic states.

Archivos Españoles de Pediatria, Madrid

March, 1918, **2**, No. 5

83 *Malignant Endocarditis in Children. L. Morquio (Montevideo).—p. 129.
84 Scabies in Children. E. A. S. de Aja.—p. 145.
85 Abscess in Lung of Child. G. Gamero.—p. 157.

83. **Malignant Endocarditis in Children.**—Morquio analyzes three cases in two girls and one boy, 8 and 5 years old, with the necropsy findings in one. These cases emphasize anew the vague and confused clinical pictures in such cases, simu-

lating typhoid, etc. In each there was embolism, right hemiplegia and death with the clinical picture of septicemia. Acute rheumatism was known in two and typhoid in the third case. In one case the endocarditis developed with pain and swelling in the right knee and ankle. Then more joints became affected and heart symptoms developed, with fever and death in four months. In the second case, gastro-intestinal symptoms were first noted in the previously healthy child, then the endocarditis symptoms, and death in two months. The youngest child had acute articular rheumatism for about a week. The mother then died of typhoid and the child developed right hemiplegia soon after, and a typhoid and endocarditic state, with death four months after the first warning symptoms of the acute rheumatism. No physician was called in until the mother's illness.

Brazil Medico, Rio de Janeiro

Feb. 9, 1918, **32**, No. 6

86 Flagellated Intestinal Parasites of Mammals. G. Hasselmann.—p. 41.
87 Syphilis the Most Chronic of Diseases. (Que é curavel da syphilis?) O. de Freitas.—p. 41.

Prensa Medica Argentina, Buenos Aires

Feb. 28, 1918, **4**, No. 27

88 *Experimental Nystagmus. R. Argañaraz.—p. 371.
89 Postpartum Displacement of Uterus. E. S. Castellano.—p. 378.

March 10, 1918, **4**, No. 28

90 Associated Laryngeal Hemiplegia. R. D. de Sanson.—p. 387.
91 Myosis plus Enophthalmos and Ptosis of Lids. E. Meirelles.—p. 389.
92 Case of Cancer of Jaw. A. H. Roffo.—p. 391.
93 Normal Beef Serum in Treatment of Anthrax. J. Penna, J. B. Cuenca and R. Kraus.—p. 396. Continuation.

88. **Experimental Nystagmus.**—Argañaraz induced nystagmus in rabbits by various means, including stimulation and destruction of the cortex, cerebellum or labyrinth. He compares the symptoms observed with the necropsy findings, and also with the findings published by others from similar research on dogs and other animals, birds and fish. The article is illustrated and the technic for the various procedures described.

Revista de la Asociacion Medica Argentina, Buenos Aires

January-February, 1918, **28**, No. 158-159

94 Parovarian Cyst Simulating Cyst in Omentum. E. Albina.—p. 5.
95 *Tuberculosis in the Navy and Its Prophylaxis. J. G. del Castillo and A. S. Lopez.—p. 13.
96 *Hypersecretion in Parotid Gland. M. C. Escalada and J. M. Jorge, Jr.—p. 32.
97 History of Public Hygiene in Argentina. E. R. Coni.—p. 45. Continuation.
98 Modification of Anterior Gastro-Enterostomy. R. Finochietto.—p. 88.
99 The Balance of Fluids in Typhoid Fever. V. Hutinel and E. Beretervide.—p. 96.

95. **Prophylaxis of Tuberculosis in the Navy.**—Castillo and Lopez relate that vaccination against typhoid and preventive measures against venereal disease have been compulsory in the Argentine navy for nearly three years, but nothing special has been done for prophylaxis of tuberculosis, and yet the mortality from this is higher than in other navies and in the army. The mortality from tuberculosis in the army in 1915 was 2.36 per thousand, but in the navy, and preparatory institutions, it was 12.40 per thousand and in the enrolled men, 5.35 per thousand. Among the new recruits (*conscriptos*) it was 19 per thousand. For pulmonary tuberculosis alone in the navy, in the enrolled men, the figures were 4.75 and among the new recruits 9.30. In the navies of Germany, Great Britain and North America the figures were, respectively, 2.40; 3.20 and 2.30, and in the Argentine army 2.36. Analysis of the data shows that the sudden change of life and the excessive physical exercise to which the new recruits are subjected cause the flaring up of apparently extinct or latent tuberculous processes in the conscripts. An initial hemoptysis in the month after joining the force is certainly the work of the excessive physical exercise following on a previously sedentary existence. Others show brief periods of fever, evidently from the unaccustomed physical overexertion. In prophylaxis, a six months' course of preliminary training in hygiene and gymnastic exercises might reenforce the defensive powers of those fit for the service, and weed out those with progressive lesions. The latter should not be returned at once to their homes, but special sanatoriums for the navy should be organized. The need for this has been long recognized by the medical officers of the navy, but no steps have been taken in the matter as yet.

96. **Unilateral Hypersecretion of Saliva.**—The parotid gland was much enlarged and the saliva spurted from the duct of Steno in a fine jet when the gland was compressed. The flow was so profuse that the man was unable to work, while he suffered constantly from thirst and headache. The flow of saliva during the night filled a basin. Under bromids the flow was transiently less profuse. On the assumption of reflex hypersecretion from irritation of the auriculotemporal nerve, this nerve was twisted until its finest fibers were torn. The technic was that applied by Leriche, Dieulafé and Aigrot to reduce hypersecretion from various causes. The nerve was reached back of the condyle of the lower jaw. The operation was comparatively insignificant but proved a complete success, as also in two other cases with annoying hypersecretion with cancer in tongue or cheek.

Revista de Medicina y Cirugia, Havana

April 10, 1918, **23**, No. 7

100 Direct Bronchoscopy, Esophagoscopy and Laryngoscopy. E. F. Soto.—p. 177.
101 *Myiasis of the Bladder. A. Mendez.—p. 185.
102 *Criminal Responsibility. R. de Castro.—p. 188.
103 Administration of Calomel to Young Children. C. M. Garcia.—p. 200.

101. **Myiasis of the Bladder.**—Mendez reports the case of a girl with a huge calculus almost filling the bladder. It was removed by a suprapubic incision, and larvae of the fly, *Lucilia macellaria* were found in the crevices of the calculus. There had been no appreciable symptoms from the myiasis, but the healing of the wound was delayed by severe hemorrhages.

102. **Criminology and Legal Medicine.**—De Castro discusses the reforms needed for the conceptions of modern penology and criminology.

Revista Medica Cubana, Havana

April, 1918, **29**, No. 4

104 *Duodenal Alimentation. Pages and Ibañez.—p. 182.
105 Breast Nursing Imperative even if the Mother is Sick. T. Hernandez.—p. 189.
106 Model Certificate of Defunction. R. Carbonell.—p. 195.

104. Summarized when it appeared elsewhere. (Abstract 93, p. 1576.)

Revista de Medicina y Cirugia Practicas, Madrid

March 14, 1918, **118**, No. 1498

107 *Radium Treatment of Cancer of Larynx. R. Botey.—p. 289.
108 Technic for Removal of Uterine Fibrosarcoma. V. Aza.—p. 292.

107. **Radium Treatment of Cancer of the Larynx.**—Botey gives an illustrated description of his method of radium intubation for malignant disease of the larynx. He expects to present at the coming national Spanish Medical Congress a detailed report of his experiences with this *intubacion radifera* during more than two years, to date. As a rule, patients with cancer of the larynx absolutely refuse an operation, while the sensitiveness of the larynx region, the reflexes set up so rapidly, forbid the direct application of radium such as has proved so successful in uterine cancers. He introduces the radium inside a small tube which fits into a tracheotomy tube, if stenosis requires a tracheotomy; if not, inside a tube something like an ordinary intubation tube. The radium tube is arranged with a lead shield so that the mucosa is protected everywhere except at the point of the cancer. Owing to the sensitiveness of the region, he gives small doses and only for 3, 6, 12 and 18 hours. Exacerbations, recurrence and metastasis are of course more frequent under radium treatment than after operative removal, but he has a number of apparent cures which justify the radium intubation treatment when radical removal is not possible.

Revista Medica del Uruguay, Montevideo

February, 1918, **21**, No. 2

109 *Utilization of Anal Sphincter in Correction of Incoercible Vesico-Vaginal Fistulas. A. Turenne.—p. 41.
110 *High Uremia. F. Cortabarria.—p. 59.
111 *Drainage for Puerperal Endometritis. J. Infantozzi.—p. 63.
112 Appendicular Syndrome with Menstruation. H. Platero.—p. 71.

109. **Utilization of Anal Sphincter in Treatment of Vesicovaginal Fistulas.**—Turenne reports a case of destructive vesicovaginal fistula for which he had done six operations—none giving more than brief temporary relief. Conditions were such that none of the ordinary procedures were applicable. He then implanted a Murphy button in the wall of the rectum and passed a retention catheter through it (Petzer No. 28) thus diverting the urine through the anal sphincter. The urethra and vulva were sutured to close them, as also the last traces of the external fistula. The woman has been on the operating table under an anesthetic nine times in all, but the news from her nearly a year since the last operation were that she has increased much in weight, the stools are normal and she can hold her urine for an hour or hour and a half, and there are no pains anywhere, no fever, and the urine is limpid; the only trace left of anything abnormal is that occasionally there is a little blood in the urine. An illustration shows the details of the simple intervention. The button and the catheter were removed on the tenth and fourteenth days. In conclusion, Turenne remarks that after the urine has been diverted in this way, attempts to close the vulva and vagina may fail again and again, as in this case, but with patience and perseverance this is finally accomplished. The anastomosis should be made close to the internal margin of the internal sphincter. The button is not necessary if one is an expert in plastic surgery of the inferior genital passages, but otherwise it materially simplifies matters. This method is indicated when there is extensive destruction of tissue, including the loss of the neck of the bladder.

110. **High Uremia.**—Cortabarria's patient was a woman under treatment for abortion. There was jaundice for six days, with vomiting, chills, and epistaxis, somnolency, and prostration, purulent lochia and irregular fever. The blood showed 2,140,000 reds; 46,000 whites, and 6.40 per thousand urea, which increased to 6.66 just before death. In the urine the figures were 7.04, 17.8 and 16.26 on corresponding days.

111. **Permanent Drainage for Puerperal Endometritis.**—Infantozzi extols the fine results he has obtained in ten years of experience with puerperal endometritis draining the uterus with a glass drain left permanently in place, supplemented by instilling some antiseptic solution. For this he usually prefers 20 or 40 c.c. of glycerin containing 5 per cent. turpentine or creosote, introducing it with a syringe and catheter. Lately he has been applying the Carrel method which has the advantage of being more fluid and permitting introduction of 100 c.c. of the fluid. He denounces copious irrigation of the uterus as exposing to grave dangers, and also protests against the use of the curet for the same reason. Digital evacuation of relics of the pregnancy is effectual if well done or a shallow (Roman) spoon might be used. Rubber tubes get kinked or clogged; a glass tube answers the purpose better. The only danger with this treatment is that bacteria may be carried up from the vagina into the uterus, in introducing the tube, but this danger can be warded off with the appropriate precautions.

Semana Medica, Buenos Aires

Feb. 7, 1918, **25**, No. 6

113 Vaccine Treatment of Diphtheria. IV. J. Mendez and L. A. Garcia.—p. 145.
114 Total Emasculation Necessary for Cancer of Penis. M. Mackintosh.—p. 152.
115 *Pharmaco-Ethnology. J. A. Dominguez.—p. 154.
116 *Buttermilk. E. Fynn.—p. 161.
117 *Prophylaxis of Infectious Diseases at Buenos Aires. E. R. Coni.—p. 162.

115. **History of Drugs.**—Dominguez calls the customs and traditions in respect to drugs, pharmaco-ethnology. He traces its history through the ages from the mythology of ancient Greece to date, describing the use of herbs, incense and oils in rituals, etc., and the use of plants, grains and herbs in the preparation of beverages and liquors. He enters into the details of the production of the native liquors of Central and South America, and mentions a drink used in Siberia made from the *Amanita muscaria,* a poisonous mushroom.

116. **Buttermilk.**—Fynn expatiates on the advantages of buttermilk in infant feeding at times. If the children dislike it, the intervals between feeding can be lengthened until they have more appetite; they usually learn to like it. He makes a practice of giving a castor oil purge before commencing the buttermilk, as otherwise the tendency to constipation that follows its use may cause absorption of toxins from the bowels. For infants over 15 months old, he gives it with 10 per cent. flour. At weaning he gives buttermilk associated with skimmed milk, gradually adding whole milk if all goes well. Dilution of whole milk with skimmed milk he has always found better than to dilute with water or gruels.

117. **Prophylaxis of Infectious Diseases at Buenos Aires.**—In this twenty-eighth instalment of his great work, "Buenos Aires caritativo y previsor," which has been running through twenty-one issues of the *Semana,* Coni tabulates the statistics since 1877 in regard to the death rate from infectious diseases. The total average in the first decade was 33.2; in the decade ending with 1916, it was only 6.6. Improvement is pronounced all along the line. The relative mortality from diphtheria and croup per ten thousand inhabitants has dropped from 91 to 16; of typhoid, from 59 to 23; of measles, from 17 to 10; of scarlet fever, from 8 to 3, and of whooping cough, from 11 to 6. The fact that all our prophylactic measures have weak links is confirmed by the severe epidemic of measles in 1915, with the unprecedentetd mortality of 358 deaths, far more than in any of the four previous decades. Diphtheria also was responsible for 402 deaths in 1915, nearly twice as many as in any year since 1886. Yellow fever, cholera and smallpox have been conquered. Yellow fever in 1871 killed 20,000 in three months out of a population of 80,000. Coni remarks that it is not enough to pass laws in regard to vaccination against smallpox. A personnel must be organized to enforce them. He describes how this has been done so effectually that there was only one death from smallpox in 1914, one in 1915 and none in 1916.

Siglo Medico, Madrid

February 23, 1918, **65**, No. 3350

118 Jacksonian Epilepsy or Hystero-Epilepsy? F. G. Aguilar.—p. 142.
119 Film Treatment of Severe Burns. M. de la Serna.—p. 143.
120 Psoriasiform Parakeratosis. Sicilia.—p. 145.
121 Vitamins in the Diet of the Laboring Classes. G. Pittaluga.—p. 145.
122 *Foundlings' Asylums. E. M. Villapadierna.—p. 146.

122. **Foundlings' Asylums.**—Villapadierna comments on the large and increasing number of these asylums in Spain, and denounces them as bad from nearly every point of view. Instead of fostering the abandoning of children, efforts should be devoted to helping the mothers to keep and bring up their children, and compel the father to bear his share of the burden. The laws should facilitate the investigation of the paternity, as it is unjust for only one of the two parents of an illegitimate child to bear all the burden. He urges the organization of a society for protection of unmarried mothers.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

March 16, 1918, **1**, No. 11

123 *Fat in the Urine. J. L. A. Peutz.—p. 728.
124 Experiences with Wassermann Reaction as a Guide to Treatment of Syphilis. J. H. Pameijer.—p. 739.
125 *Traumatic Dermoid Cysts. I. J. Van den Helm.—p. 746.
126 *Scarlet Fever in Parturient. B. Veraart.—p. 748.

123. **Fat in the Urine.**—Peutz remarks that appreciable fat in the urine must be regarded as pathologic unless after ingestion of excessive amounts of fats. Brieger was unable to induce alimentary lipuria in numerous tests, and Peutz found no traces even of lipemia after subcutaneous injection of large amounts of finely emulsified fats. Alimentary lipuria is induced more readily in animals, especially in dogs.

The minute quantities of cholesterol and lecithin found in the urine constitute a physiologic lipuria. This seems to be increased in malaria and tuberculosis, and reduced with cirrhosis of the liver, and lipoiduria may be pronounced with chronic nephritis. A large content of fat acids was found in the urine in a case of phosphorus poisoning, and in a patient with hematoporphyrinuria. The distinction between lipuria, lipoiduria and chyluria has not always been sharply drawn by different writers. Chyliform changes may be induced in the urine by products from tumors, suppuration and infectious processes, a pseudochyluria, or there may be lymphuria. The fat particles can be detected by the microscope, and are dissolved by ether, benzol, ligroin and chloroform, but are scarcely soluble in alcohol, and not at all in water. They also spot paper characteristically.

He discusses the possible causes of chyluria: obstruction of lymph vessels from within or without, obstruction from vasomotor influences, or from infectious processes. In the two cases he reports, the attacks of chyluria were always preceded by pain in the kidney region or side. There was rapid loss of flesh, but severe pulmonary tuberculosis in one case contributed to the emaciation. In the other case the man for twenty years had been occasionally under treatment for what was supposed to be tuberculosis of the kidney, but in the intervals his earning capacity was not much impaired. The chyluria in this case developed only at night, after he had been lying bent over, on his side, and it was always preceded by pain in the side. In a similar case reported by Magnus-Levy, the chyluria occurred only during cold weather and on reclining at night. If the man got up in the night and exercised, his urine cleared up to limpid again. Urine containing milk shows milk sugar, while no sugar, or only grape sugar, is found with chyluria. In treatment of chyluria, a course of antisyphilitic measures is often advisable, and always we can seek to improve the general condition and make up in the diet for the waste of albumin and fat in the chyluria. We must do this even although this may intensify the chyluria. It may be possible, also, to give food of such a kind that it is taken up by the blood capillaries in the intestines, instead of the lymphatics. Subcutaneous injection of fat might also be tried, although to date we have no convenient and effectual method for supplying needed calories by subcutaneous injection of fat; olive oil is liable to entail a painful infiltration which disappears only very slowly.

125. **Traumatic Dermoid Cyst.**—Van den Helm applies this term to tumors developing from implantation of particles of skin into deeper tissues, either during an accident or in some operation. The mechanism is thus the same in the acquired, traumatic form as in the congenital. In both his cases the "implantation cyst" developed several years after a radical mastoid operation. The growth was removed under the diagnosis of atheroma; it was adherent to the scar tissue and to the deeper tissue below.

126. **Scarlet Fever and Umbilical Infection.**—The child died the second day after an extremely rapid spontaneous birth, the discolored umbilical cord explaining the fatality. The mother developed septic fever and died ten days after delivery. No cause for these tragic occurrences could be discovered until an eruption of scarlet fever on one of the other children in the family, just before the death of the mother, explained the sepsis.

Hospitalstidende, Copenhagen

March 20, 1918, **61**, No. 12

127 *Surgery of Arteries. J. Ipsen.—p. 353.
128 Roentgen Findings in Fractured Calcaneum during Life and After Death. T. Eiken.—p. 365.
129 Present Status of Benign Glycosuria. E. Jarløv.—p. 370.

127. **Surgery of Vessels.**—In the first of Ipsen's three cases, he resected a femoral arteriovenous aneurysm and implanted a section of the femoral vein, with excellent results. The lesion had developed after a pistol wound in the region. In two other cases he opened the popliteal artery to extract an embolus. The first patient was a young woman who for years had presented symptoms of heart insufficiency and finally of embolism in the popliteal artery. There was pronounced necrosis of tissues when the case was first seen, nine days after the embolism. Amputation seemed inevitable, but the leg turned reddish as the embolus was removed and under careful management the leg was saved. Although the embolus was of eleven days' standing, it had not become adherent to the vessel. The case teaches that much can be ventured even in old cases. In the second case there was thrombosis elsewhere, responsible for the fatal outcome a few days later.

Ugeskrift for Læger, Copenhagen

March 14, 1918, **80**, No. 11

130 *Falling of Hair as Early Symptom of Syphilis. M. B. Pedersen. —p. 425.
131 Comparison of Arsphenamin Preparations. M. B. Pedersen.— p. 431.

March 21, 1918, **80**, No. 12

132 Dyspepsia with Chronic Habitual Constipation. VI. T. E. H. Thaysen.—p. 467. To be continued.
133 Invagination by Meckel Diverticulum. A. Vangsted.—p. 480.
134 *The Death Rate and Causes at Copenhagen 1715. P. Heiberg. —p. 486.

130. **Falling of the Hair an Early Sign of Syphilitic Meningitis.**—Pedersen remarks that the modern diagnosis of syphilis is a "matter of punctures," but that puncture to obtain spinal fluid can sometimes be dispensed with as the behavior of the hair reveals pathologic conditions below. Cyranka and Gärtner have reported that the spinal fluid was found notably pathologic in all but two of thirty-five soldiers with alopecia leukodermica. Nineteen of the men had never been treated for their syphilis, which dated from two months to two years, while the others had been given more or less treatment. It was noted further that the Herxheimer reaction was unusually pronounced in men with patches of thinning of the hair, and that exceptionally vigorous specific treatment was required before it subsided. In three other cases (optic neuritis, general paresis and incipient tabes), with an interval of from two to six years since the infection, each had had patches of alopecia early in the disease. This indicates that the virus had attacked the meninges early. Pedersen reports a group of ten cases in which different manifestations of syphilis—acquired, in all probability, less than five months before—were accompanied by a general falling of the hair. This sign of injury of the meninges was observed before the spinal fluid presented pathologic findings, with two exceptions. In another group of ten patients the falling of the hair occurred in irregular patches, along with other manifestations of syphilis. The infection dated mostly from six to nine months; in none from less than three months. The spinal fluid findings were positive in all but two who had been given extra energetic treatment. Pedersen concludes from these experiences that syphilitic meningitis occurs more frequently along with irregular patches of thinning or falling of the hair than with any of the other clinical manifestations of syphilis. Hence syphilitics showing even a suggestion of a "mangy" appearance of the scalp should be given particularly vigorous treatment, and be kept under close and prolonged supervision, and the spinal fluid should be examined at the close of the first year of treatment, unless symptoms on the part of the central nervous system call for this earlier.

134. **The Causes of Death at Copenhagen in 1715.**—An official report with this title and the date has recently been found among the state papers of Denmark. Nearly fifty different causes of death are listed for the total 2,265 deaths during the year, to a population of about 50,000. The list includes 58 stillborn and 141 newborn children, and 239 deaths from diseases of the chest; 82 from consumption; 632 from smallpox; 364 from "stroke" (convulsions) mostly in children; 189 general debility; 21 from dropsy; 2 from epilepsy; 72 from "fever"; 85 from "violent fever", and 108 from old age. Only 7 deaths from violence are recorded, and 5 from accidents during the year. One fatal case each of periodical insanity, melancholia, and hernia is reported; 9 persons were executed, and the death of 30 is ascribed to scurvy. Four years before the date of this report was the great plague year, which reduced the population from 66,000 to 44,000.

THE WAR SERVICE OF THE MEDICAL PROFESSION

A SURVEY INCLUDING THE NAMES OF CIVILIAN PHYSICIANS IN MILITARY SERVICE AND A TABULATION OF STATISTICS BY COUNTIES AND STATES

The same principle that requires each state or community to furnish its quota of men for the Army should also apply in securing physicians for the Medical Reserve Corps. To determine to what extent the various parts of the country had met this responsibility, the American Medical Association last winter compiled a list, by states and counties, of the physicians who had accepted commissions in the Medical Reserve Corps. This first survey was completed in March, and the matter down to and including Maryland was published in the American Medical Association *Bulletin.* It was the intention to publish the rest of this survey in the next issue of the *Bulletin* without delay. However, as the preliminary survey included only physicians who had accepted their commissions up to January, 1918, and therefore was not up to date, the War Committee of the American Medical Association directed that this preliminary survey be revised and completed to date of publication so far as possible. The War Committee, believing that all physicians should have this information, decided to publish it in THE JOURNAL, rather than in the *Bulletin,* the regular circulation of which is limited to the presidents and secretaries of the component county and constituent state associations.

Another reason for this action by the War Committee was the receipt of Surgeon-General Gorgas' letter[1] of April 3, requesting the cooperation of the American Medical Association. The Surgeon-General stated: "The additional increase in the Army during the next few months will probably necessitate the service of 5,000 physicians who as yet have not made application for a commission in the Medical Reserve Corps . . . it is estimated that the Medical Reserve Corps will need a steady increase of at least 2,500 applicants a year during the continuance of the war." Paragraphs five and six of his letter read:

> "5. It is earnestly desired that the interests of the civil communities be conserved as far as possible and that no enlistments in the Medical Reserve Corps be made that would work serious hardship upon any community, manufacturing concern or other civil activity by taking from such community, manufacturing concern or other civil activity, physicians whose services are needed for the efficient and competent care of the civil population or the employees of large concerns.
>
> "6. To this end the department desires the closest cooperation and assistance of the American Medical Association, its officers and its allied organizations, believing that through its organizations the additional [illegible]ment to the Medical Reserve Corps can be most satisfactorily obtained and the necessary increment for [illegible]nts be secured without in any way depriving any community of physicians whose services are necessary [illegible]welfare and without depriving any manufacturing or other concern of its medical personnel when [illegible] cannot be spared."

Th[illegible]ble that physicians should be familiar with the information contained in the survey in [illegible]ay better help in carrying out effectively the sentiments expressed in paragraphs five [illegible]rgeon-General's letter. All the data concerning each state are assembled in a table accom[illegible]ter for the state. These tables make it possible at a glance to determine the important facts [illegible] county: the area, population, total number of physicians, number of physicians under 45 and [illegible]rs of age, number of women physicians, total number of physicians in the county, number of [illegible] the county society, and the number and names of physicians who are already under commission [illegible]y or in the Navy. The last column of the table is the most important one. It lists the number [illegible]ns in the federalized National Guard, as well as commissioned medical officers in the Reserve [illegible] the Army and the Navy. It does not include the regular Medical Corps of either the Army or [illegible]; those who have been commissioned but have not yet accepted their commissions; or those who

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[1] [illegible] JOURNAL A. M. A., April 13, 1918, p. 1100.

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113 Vaccine Treatm
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114 Total Emascu
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115 *Pharmaco-Et
116 *Buttermilk.
117 *Prophylaxis
—p. 162.
115. History
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are serving as contract surgeons. It must be borne in mind, therefore, that this last column of the table does not include those who have made application for commission, or even those who have been awarded a commission unless that commission has been accepted. At the present writing, May 24, there are many pending applications.

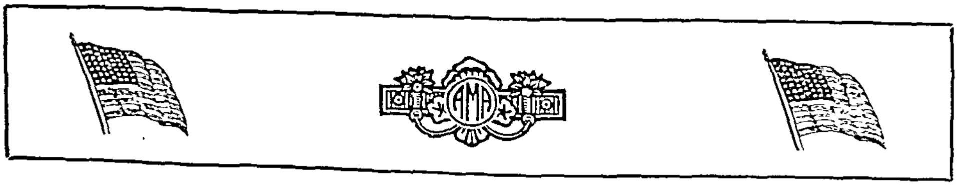
The preparation of this survey has been a difficult undertaking. Undoubtedly the data are not perfect: some names may have been included that should not have been; more likely, some have been omitted that should have been included. We ask our readers, and especially county secretaries, to check over the Honor Roll and the tabular data covering their particular county, and to send corrections or comments to Dr. A. R. Craig, Secretary of the American Medical Association, 535 N. Dearborn Street. It is urged that this be done promptly, so that a corrected and amplified survey may then be made available to the component societies of every state. This survey for component societies will be in the form of a list of registered physicians for the territory covered; on it will be indicated not only those physicians who have accepted commissions, but also those who have made application for commission, those to whom commissions have been granted but who have not yet accepted them, etc. Those coming within the age limits for the Medical Corps and the Medical Reserve Corps of both the Army and Navy will also be indicated.

In addition to the table in each state, a similar table will be found at the end of the survey covering the whole country. This latter table, besides assembling the totals for each state, shows the percentage of the medical profession already commissioned in each state.

We may estimate that in addition to the Regular Corps, a total of 30,000 medical officers will be required for the present year—27,500 for the Army, and 2,500 for the Navy. The number of physicians in the United States, according to the new American Medical Directory now on the press, is 146,500. Hence it will take between 20 and 21 per cent. of the total number of physicians of the country to supply the 30,000. This means as a minimum one in five. To supply one out of every five physicians to the Government, if managed rightly, ought not to be a severe strain on our profession. There are many communities and industrial centers that can not spare any physician; on the other hand, there are many that can easily spare two out of five. This is especially true of large cities.

Finally, the purpose of this survey is to make available to physicians in every community of the country information which may assist them in determining whether or not their locality is meeting its obligation in providing the needed number of physicians for military duty. The county societies naturally are best qualified to pass on the actual needs of the civilian population of their territory, as well as to furnish information relative to the personnel of the profession. For evident reasons the county society may not always be able to decide who should and who should not volunteer. Such problems can sometimes be better worked out through the cooperation of the county society with the War Committee of the state association and of the American Medical Association. With the state and county organizations cooperating, there is little doubt that each state will be able to supply its quota without serious hardship on either the civilian population or individual members of our profession.

NOTE.—Many names were added after the Honor Roll was in page form. These are inserted under the respective counties but out of alphabetical arrangement. *They are in italics.*—ED.



MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Officers 1918-19

I. L. Watkins, President..............Montgomery
Henry S. Ward, Vice President..............Birmingham
E. B. Ward, Vice President..............Selma
Henry C. Perry, Secretary..............Montgomery
J. U. Ray, Treasurer..............Woodstock
S. W. Welch, State Health Officer..............Montgomery

Councilor Districts

First District.—Choctaw, Clarke, Marengo, Mobile, Washington and Monroe Counties.

Second District.—Baldwin, Butler, Conecuh, Covington, Crenshaw, Escambia, Montgomery, Pike and Wilcox Counties.

Third District.—Barbour, Bullock, Coffee, Dale, Geneva, Houston, Henry Lee and Russell Counties.

Fourth District.—Calhoun, Chilton, Cleburne, Dallas, Shelby and Talladega Counties.

Fifth District.—Autauga, Chambers, Clay, Coosa, Elmore, Lowndes, Macom, Randolph and Tallapoosa Counties.

Sixth District.—Greene, Sumter, Tuscaloosa, Hale and Perry Counties.

Seventh District.—Blount, Cherokee, Cullman, DeKalb, Etowah, Marshall and St. Clair Counties.

Eighth District.—Colbert, Jackson, Lauderdale, Limestone, Madison and Morgan Counties.

Ninth District.—Jefferson County.

Tenth District.—Fayette, Franklin, Lamar, Marion, Pickens, Walker and Winston Counties.

HONOR ROLL

Baldwin County

BAYOU LABATRE—Ha[illegible] DAPHNE—George Washington Kiehnhoff. F[illegible]e Godard; Samuel Holt Hodgson. MAGNOLIA [illegible] Cowgill. PERDIDO BEACH—Henry Goldthwaite [illegible] Franklin Peavy Jr.

Barbour County

CLAYTON—Daniel Bascom Faust. EUFAULA—John Mac Bell; Joe W. Fenn.

Bibb County

BELLE ELLEN—Robbins Nettles. BLOCKTON—Homer Wilson Allgood; Elisha Baker Smith. CENTERVILLE—William M. Peters. *WEST BLOCTON—Nuckols Thornton Davie.*

Blount County

BLOUNTSVILLE—Foster Gaines Finley.

Bullock County

FITZPATRICK—Joel Clifford Griswold; Hugh Farrior McLaurine; Lucien Montague Tompkins. MIDWAY—Howard Payne Rankin. UNION SPRINGS—James Luther Bowman; Bryant Benjamin Edwards; John Roy Oswalt.

Butler County

FOREST HOME—Conrad Wall. GREENVILLE—Mack C. Hawkins.

Calhoun County

ANNISTON—George Alonzo Cryer; Fred Douglas Jackson; Samuel Sellers Underwood; John McIntire Whiteside; Leroy Hammond Woodruff. PIEDMONT—James Patrick Vansant.

Chambers County

LAFAYETTE—Raymond Brock Ramage. SHAWMUT—Alfred Clinton Smith.

Cherokee County

CEDAR BLUFF—William Sparks McElrath. CENTER—William Asberry Sewell; Samuel Carter Tatum; William Briggs Tatum.

Chilton County

CLANTON—Arthur Johnson; Samuel E. Johnson. THORSBY—Columbus Morgan Woolley.

Choctaw County

YANTLEY—Herbert Lament Phillips.

Clarke County

FULTON—Benjamin Franklin Adams. JACKSON—John R. Armistead. SALITPA—Leon Victor McVay. THOMASVILLE—Ralph Moselay Kimbrough. WHATLEY—John Cooper Godbold Jr.

Clay County

ASHLAND—Alexander Wilson Graves.

Cleburne County

HEFLIN—John Ralph Morgan.

Colbert County

TUSCUMBIA—Louis Willoughby Desprez; William Meredith Pierce.

Conecuh County

BELLEVILLE—Percy Bradley Skinner. EVERGREEN—Kossuth R. Cammack.

Coosa County

GOODWATER—Llewellyn Herndon Ledbetter. KELLYTON—Artice Edward Culbertson.

Covington County

GANTT—William Martin Blair.

Crenshaw County

BRANTLEY—J. Glenn Gilchrist; Samuel Wilson Horn. DOZIER—Thomas Walter Taylor. LUVERNE—Emmette Eugene Pollard.

Cullman County

CULLMAN—Edward Dudley McAdory; Rufus Alva Culpepper. GARDEN CITY—T. H. Sudduth.

Dale County

ARITON—Hillie Robert Dykes; Albert David McFadden.

Dallas County

SELMA—William Wilkes Burns; Drayton Howard Doherty; Clarence Couch Elebash; Milner Hubbard Eskew; Wm. Dale Harper; Ferdinand Jackson Herbert; James Ken[illegible]; Monroe A. Maas. *MARION JUNCTION*—Jos. Glenn Donald.

ALABAMA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Comm's'd in M.R.C., etc.
Autauga......	584	44.9	21,589	1,660	13	..	5	11	12	..
Baldwin.......	1,595	56.9	21,816	779	28	1	16	20	14	7
Barbour.......	912	30.4	32,728	1,090	30	..	19	26	27	8
Bibb..........	634	21.8	25,926	894	29	..	20	26	20	5
Blount........	649	28.2	21,456	933	23	..	12	18	12	1
Bullock.......	610	29.0	20,196	961	21	..	14	18	16	7
Butler........	763	33.1	31.417	1,365	23	..	15	20	18	2
Calhoun.......	630	10.6	42,210	715	59	..	34	42	39	6
Chambers.....	588	22.6	38,612	1,485	26	..	10	20	26	2
Cherokee......	577	33.9	20,226	1,189	17	..	7	10	11	4
Chilton.......	729	31.6	28,053	1,219	23	..	13	21	13	3
Choctaw......	932	40.5	18,736	814	23	..	16	21	14	1
Clarke........	1,216	40.5	33,321	1,110	30	..	16	21	26	5
Clay..........	614	25.5	23,857	994	24	1	9	18	19	1
Cleburne......	568	47.3	13,516	1,126	12	..	4	9	9	1
Coffee........	678	24.2	29,876	1,067	28	..	16	26	18	..
Colbert.......	618	24.7	26,598	1,063	25	..	10	16	17	2
Conecuh.......	849	53.0	24,294	1,518	16	..	13	15	15	2
Coosa.........	655	40.9	16,992	1,062	16	..	7	13	14	2
Covington....	1,042	37.0	44,372	1,584	28	..	21	26	27	1
Crenshaw.....	618	22.8	25,974	962	27	..	16	20	13	4
Cullman......	763	23.1	35,964	1,089	33	..	16	27	25	3
Dale..........	563	22.5	25,467	1,018	25	..	16	23	15	2
Dallas.........	957	17.7	53,401	988	54	..	16	47	43	9
Dekalb........	786	20.1	31,693	812	39	..	18	34	24	1
Elmore........	622	24.8	29,810	1,192	25	..	15	17	20	3
Escambia.....	957	45.5	24,413	1,162	21	..	13	18	20	3
Etowah.......	542	10.2	47,685	899	53	..	29	35	38	6
Fayette.......	643	30.6	17,792	847	21	..	13	18	12	1
Franklin......	647	26.9	21,454	893	24	..	11	18	23	1
Geneva........	578	11.5	30,915	618	50	..	13	37	28	4
Greene........	635	70.5	22,717	2,624	9	..	13	8	6	1
Hale..........	646	34.0	27,883	1,467	19	..	9	8	11	1
Henry.........	560	31.1	24,684	1,371	18	..	12	10	8	..
Houston......	579	12.8	38,204	849	45	..	25	38	37	5
Jackson.......	1,140	39.3	34,678	1,195	29	..	17	21	20	7
[1]Jefferson......	1,135	2.4	289,293	626	462	..	323	403	293	87
Lamar........	601	21.4	18,512	661	28	..	15	20	16	1
Lauderdale....	694	20.4	34,130	1,003	34	..	19	25	12	2
Lawrence......	700	41.1	23,341	1,373	17	..	12	14	11	..
Lee...........	632	22.5	33,626	1,200	28	..	14	21	11	4
Limestone.....	596	19.8	30,161	1,005	30	..	13	19	14	5
Lowndes......	739	36.9	31,894	1,595	20	..	10	16	13	2
Macon.........	614	27.9	28,184	1,281	22	..	14	20	11	2
Madison.......	811	19.3	49,478	1,178	42	..	23	33	33	5
Marengo......	966	31.1	41,097	1,325	31	..	18	22	19	2
Marion........	743	29.7	19,684	787	25	..	14	19	17	1
Marshall......	602	16.2	32,395	875	37	..	24	30	28	5
[2]Mobile.........	1,226	8.7	59,201	458	129	2	74	110	72	28
Monroe.......	1,012	44.0	34,873	1,516	23	..	16	21	15	2
[3]Montgomery..	801	7.3	29,700	272	109	..	64	90	68	15
Morgan.......	587	14.6	44,039	1,100	40	..	25	35	28	2
Perry.........	737	52.6	45,534	3,252	14	..	7	12	10	3
Pickens.......	875	27.3	25,531	797	32	..	21	26	25	2
Pike..........	671	18.1	32,012	865	37	..	19	30	26	7
Randolph.....	590	23.6	26,858	1,074	25	..	14	19	21	1
Russell........	655	46.7	25,937	1,852	14	..	6	12	10	2
St. Clair.......	645	23.8	21,656	802	27	..	17	23	19	2
Shelby.........	806	38.3	29,331	1,396	21	..	18	13	12	..
Sumter........	908	32.4	28,699	1.025	28	1	18	22	17	9
Talladega.....	755	14.8	39,488	774	51	..	27	44	44	8
Tallapoosa....	763	42.3	32,025	1,779	18	..	15	10	9	6
Tuscaloosa....	1,346	17.9	55,888	745	75	..	62	68	43	13
Walker........	777	13.8	45,663	815	56	..	25	39	46	2
Washington...	1,087	90.5	16,876	1,406	12	..	7	8	11	1
Wilcox........	896	23.5	33,810	897	38	..	23	32	32	6
Winston.......	630	45.0	15,263	1,090	14	..	12	10	10	..
Totals......	51,279	20.3	2,307,304	913	2,525	5	1,568	2,046	1,706	320

1. Includes Birmingham, population 174.108; physicians 309 [M.R.C. 77].
2. Includes Mobile, population 56,536; physicians 95 [M.R.C. 18].
3. Includes Montgomery, population 42,531; physicians 92 [M.R.C. 14].

DeKalb County

COLLINSVILLE—H. Lamar McWhorter.

Elmore County

TALLASSEE—Edmund Rushin Lett; Joseph Marion Weldon. EAST TALLASSEE—Robt. Harold Coker.

Escambia County

ATMORE—Alfred Pellar Webb. BREWTON—Middleton H. Hagood. FLOMATON—Floyd Lamar Abernethy.

Etowah County

ALABAMA CITY—Robert A. Burns. ATTALLA—Guy Edward Stewart. GADSEN—Thomas Young Greet; Hartsford Lee Ison; Lemuel Bradford Nicholson; John Shahan.

Fayette County

FAYETTE—William W. Long.

Franklin County

RED BAY—Zadoc Lorenzo Weatherford.

Geneva County

GENEVA—Charlie Hick Chapman. HARTFORD—Frank Walker Young. SAMSON—Benjamin Jefferson Lewis; F. V. Meriwether.

Greene County

FORKLAND—Julian Keith Lagare.

Hale County

AKRON—William Leslie Waites.

Houston County

DOTHAN—Henry Beechum Burdeshaw; Percy O. Chaudron; Woodfin Grady Page; Thomas Meriwether Barnett; John Arthur Keyton.

Jackson County

BASS STATION—Walter Willis Rosser. HOLLYWOOD—George Earl Nye. LARKINSVILLE—Albert S. Zimmerman. SCOTTSBORO—Hugh Boyd; Charles David Mason. SWAIM—James Houston Sentell. WOODVILLE—Rayford Hodges.

Jefferson County

BESSEMER—James Howard Blue; Hugh Earle Conwell; Clyde Neville Garmon; Carl A. Harris; John Howard Hays; Velpeau Hill Ragsdale; Lucius Lamar Terry; Solon Westcott Wright.

BIRMINGHAM—John Clifton Anthony; Robert F. Ashworth; James Robbins Bean; William R. K. Beck; William Henry Beddow; Alvin Ernest Belden; James H. Blackwell; Ollie Paxton Board; Henry Boxer.

Eldridge Tracy Brown; Robert Turner Brown; John Turpin Callaway; William Russell Callen; Andrew Crozier Cameron; Paul Lee Cocke; John Cochran; Maurice Herbert Cohn; Kosciusko W. Constantine; Modie Ezra Cunningham.

William Cecil Dabney; Edgar William Daly; John D. Dickson; Wes'ey Earl Drennen; Harry Clay Edmundson; Wm. Elbert Faris.

Frank Gaines Grace; Grover Cleveland Hamilton; Henry Pierce Hanna; Charlton Sidney Harris; Seale Harris; Joseph Walter Hughes; Rufus Jackson; William Jordan.

Thomas Knight Lewis; John McPherson Lowrey; Cabot Lull Jr.

Thomas Vannoy Magruder; Claude Cooper McClean; James Somerville McLester; Isaac Michlin; Grover Eugene Murphy; Claude Dewey Myers.

Marcus Pinson Neal; Robert Nelson; Michael McCormick Nolan; Lloyd Noland; George A. O'Connell; Earl Emmett Pate.

Gaston Wilder Rogers; Mack Rogers; Walter Francis Scott; John Dole Sherrill; Harry Moody Simpson; Emmitt Clarence Sinlard; Lewis Edmond Sorrell; Octavius Manlius Spencer; Mitchell Porter Stiles.

Sidney Johnston Vann; Alfred Augustus Walker; Groesbeck F. Walsh; Miles Abnernathy Watkins; Clarence Cicero Wiley; Luther Elgin Wilson; Norman Isaac Wood; Sterling Chase Wood; Leo Clement Wood.

BIRMINGHAM—Alto Leon Kelley; Jerome Meyer; E. Laurence Scott.

CARDIFF—Hiram O. Barker. ENSLEY—Alvin Ethelbert Cowan; William D. Fonville; Robt. G. Lovelady; William Jesse Robins; Chas. Ernest Tedder. FAIRFIELD—Burr Ferguson. FLAT TOP—John W. Watts. PORTER—Hathaway J. Denman. WYLAM—Roscoe Conkling Stewart.

Lamar County

Paul Tidence Young.

Lauderdale County

FLORENCE—Leon Cicero Ellis. ROGERSVILLE—Julius Orville Belue.

Lee County

AUBURN—Isham Kimbell. LOACHAPOKA—Orlando Velpeau Langley. OPELIKA—John Felix Jenkins; Gilmer H. Moore.

Limstone County

ATHENS—Andrew Lewis Glaze Jr.; John Frederick Hughes; John Francis Taylor. BELLE MINA—Joseph Jewett Pettus. ELKMONT—Clifford Vernon Mayhall.

Lowndes County

HAYNEVILLE—George Clark Marlette; Wm. Llewellyn Staggers.

Macon County

NOTASULGA—Charles E. Williams. TUSKEGEE—Robert Henry Howard.

Madison County

GURLEY—Benjamin Emmett Graham. HUNTSVILLE—Richard Walker B.lling; William Richard Rousseau. MADISON—Irvine White Patton. TONEY—William Clifton Hatchett.

Marengo County

DEMOPOLIS—William Thompson Cocke; Thos. Caldwell Savage.

Marion County

OPELIKA—Edwin C. Thomas.

Marshall County

ALBERTVILLE—Isaac L. Dowdy; Jesse Albert Goode. BOAZ—Beaman Sherley Cooley. GUNTHERSVILLE—Robert Foster Fennell. HORTON—Henry Grady Waddell.

Mobile County

CHUNCHULA—Jesse McCampbell Reed. BAYOU LABATRE—George Carleton Kilpatrick. GRAND BAY—Robert Bruce Dodson; Mannie Almanza Fort.

MOBILE—James Howard Agnew; James Monroe Allison; Burton Forsyth Austin; Eugene DuBose Bondurant; Robert Dwight Brown; Herbert Phalon Cole; H. H. Forcheimer; Toxey Daniel Haas; Thomas Nathaniel Harris; Francis Marion Inge; Carl Thomas Jones; William H. Oates; William A. Padgett; Mercer Rowe; John O. Rush; Edward Simmons Sledge; Eugene Thames. MT. VERNON—Arthur McCluney Cowden; Otis W. Little; Monte Leroy Moorer. SPRING HILL—Cecil Hubert Ross.

MOBILE—Lawrence Bryant Farrior.

SPRINGVILLE—Duke Constantine Bradford. THEODORE—Howard S. J. Walker.

Monroe County

PERDUE HILL—Wm. E. Broughton; Samuel S. Gaillard.

Montgomery County

HOPE HULL—Fred Crenshaw.

MONTGOMERY—James Norment Baker; Samuel A. Billing; Frederick Boswell; John Decatur Durden; Robert Goldthwaite; James Robert Haigler; Thomas Brannon Hubbard; Harry Toulmin Lay; Julius Watkins McCall; Wm. Rasbury Rankin; Richard C. Rush; B. D. Smith; James Lee Smith; Charles Alston Thigpen. RAMER—Clanton R. Athey.

Morgan County

ALBANY—Frank P. Pettey. DECATUR—Deo V. Darden.

Perry County

MARION—Edward Swann. SPROTT—Robert B. Pryor. UNIONTOWN—Frank White McCorkle.

Pickens County

CARROLLTON—Hugh Wilson Hill; Thomas Luther Zuber.

Pike County

BRUNDAGE—James Frank Bean. TROY—James W. Beard; Robert B. Beard; James Y. Hamil; Gilbert Alfred Rhodes; John Gillis Sanders; H. M. Weedon.

Randolph County

ROANOKE—John William Hooper.

Russell County

HURTSBORO—Francis Gustavus Hendrick. SEALE—John Prather.

St Clair County

ASHVILLE—David Calhoun Williams. SPRINGVILLE—Ernest Charles Hagood.

Sumter County

BELLAMY—Robert Eugene Hale. COATOPA—Ernest Abram Moore. EMELLE—Austin Francis Jefferson Boyd. EPES—James Kearney Miller. GAINESVILLE—Robert Ellyson Harwood. LIVINGSTON—Marion Tabb Davidson; John Perkins Scales. WARD—Walter Earl Allen. YORK—George Guy Oswalt.

Talladega County

[illegible] Eason Sherer. RENFROE—Albert G. Sims; [illegible] ACAUGA—French Heed Craddock. TALLA- [illegible] ; Duncan Patterson Dixon; Elisha Henry [illegible] wick.

Tallapoosa County

ALEXANDER CITY—Larcus B. Allen; James O. Griffin; Thomas Hezekiah Street. CAMP HILL—Lewis Herschel Hamner; W. Theo. Langley. DADEVILLE—Joseph Todd Banks.

Tuscaloosa County

BUHL—James Lawrence Booth. ECHOLA—George Washington Hall. NORTHPORT—Edward Cleveland Hagler. SQUAW SHOALS—William Forest Youmans.

TUSCALOOSA—Alston Fitts; Robert Emmett Dixon; Lonnie Woodfin Grove; Toombs Lawrence; Joseph Alston Maxwell; Maxwell Moody; Andrew Battle McKenzie; James Henry Somerville Jr.; Daniel Webster Ward.

Walker County

BURNWELL MINES—James Herman Phillips. JASPER—James Haywood Davis.

Washington County

CHATOM—William Edward Kimbrough Jr.

Wilcox County

CAMDEN—John Paul Jones; Thomas Warburton Jones. FURMAN—James Devote Perdue; Ross Clair Speir. GASTONBURG—Horace Van de Voort.

ARIZONA MEDICAL ASSOCIATION

Officers 1917-18

William A. Holt, President	Globe
W. Warner Watkins, First Vice President	Phoenix
A. J. Murrieta, Second Vice President	Jerome
W. W. Wilkinson, Third Vice President	Phoenix
C. E. Yount, Secretary	Prescott
R. D. Kennedy, Treasurer	Globe

Councilor Districts and Officers

Middle District—Roy Thomas, Councilor, Phoenix.
Southern District—E. R. McPheeters, Councilor, Clifton.

ARIZONA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Apache	11,379	1,422.3	9,853	1,231	8	..	4	7	3	2
Cochise	6,170	118.6	53,089	1,020	52	1	43	47	31	14
Coconino	1,823	140.2	10,041	772	13	..	7	11	1	2
Gila	4,683	167.2	22,993	821	28	..	24	24	17	6
Graham	6,508	271.1	11,707	1,950	6	..	1	4	2	2
Greenlee			18,894	1,049	18	1	14	17	15	2
Maricopa	8.891	94.5	44,731	475	94	4	50	74	57	12
Mohave	13,390	1,217.2	4,026	366	11	..	7	9	5	3
Navajo	10,300	858.3	13,399	1,116	12	..	10	10	4	6
Pima	9,505	339.4	28,751	1,026	28	1	15	21	20	3
Pinal	5,380	413.8	9,968	766	13	..	7	12	6	1
Santa Cruz	1,229	136.5	8,387	931	9	..	7	7	5	..
Yavapai	8,150	291.0	17,598	628	28	1	15	23	17	3
Yuma	9,987	907.9	10,351	941	11	1	7	8	6	3
Totals	97,395	294.2	263.788	797	331	9	211	274	189	76

HONOR ROLL

Apache County

CARRISO—Robert W. Bell. ST. JOHNS—Thomas Jefferson Bouldin.

Cochise County

BISBEE—Morris Dabko Cohen; Robert Ferguson; Ralph Eugene Herendeen; Edward John Richstein; Francis Eppes Shine; Thomas Watkins.

DOUGLAS—W. A. Christensen; Jerome McKain Leonard; Adolphus A. McDaniel; Wm. Mann Randolph; Frederick Thompson Wright. JOHNSON—George Conrad Snyder.

BENSON—Ernest Brent Thompson.

Coconino County

LEUPP—Basil Augustine Warren. WILLIAMS—Richard McClellan Francis.

Gila County

GLOBE—Walter William Horst; Roderick D. Kennedy; Charles Theophile Sturgeon. MIAMI—John Elmer Bacon; Frederick F. Miller; Theron Hart Slaughter.

Graham County

SAFFORD—Geo. Scott Martin; Willis Elton McWhirt.

Greenlee County

CLIFTON—Fred Oscar Lien; Charlton Jay.

Maricopa County

BUCKEYE—Franklin Leeds Leister. MESA—Joseph M. Greer. PHOENIX—James Henry Bryant; Henry Justin Felch; Francis Frederick Malone; Grant Stafford Monical; Charles B. Palmer; William Henry Sargent. KOMATKE—Albert Rowland Warner. SALT RIVER—Spencer Draper Whiting. VERDE—Wm. Craig Judd.

PHOENIX—Roy Eccles Thomas.

Mohave County

KINGMAN—Albert Llewellyn Tilton. MOHAVE CITY—Wm. D. Petit. OLDTRAILS—Carlisle Benjamin Wiley.

Navajo County

KEAMS CANON—Lee Henry Curran. TOREVA—Martin Robert Reiber. WHITE RIVER—Roger V. Parlett. WINSLOW—Roscoe G. Bazell; Charles Lynn Hathaway; Jacob Leroy Prichard.

Pima County

AJO—Austin Charles Wright. TUCSON—Joel Ives Butler; I. E. Huffman.

Pinal County

SUPERIOR—Lawrence Dale Dusch.

Yavapai County

PRESCOTT—Harry T. Southworth. SELIGMAN—Francis Huston Cartnell; C. E. Yount.

Yuma County

YUMA—Leon Jacobs; Hilary Dunham Ketcherside; Roy Raymond Knotts.

ARKANSAS MEDICAL SOCIETY

Officers 1917-18

Wm. Breathwit, President	Pine Bluff
H. A. Strond, First Vice President	Jonesboro
E. F. Ellis, Second Vice President	Fayetteville
W. W. York, Third Vice President	Ashdown
Clinton P. Meriwether, Secretary	Little Rock
William R. Bathurst, Treasurer	Little Rock

Councilor Districts and Officers

First District.—Crittendon, Clay, Craighead, Greene, Lawrence, Mississippi, Poinsett and Randolph Counties. J. H. Stidham, Councilor, Hoxie.

Second District.—Cleburne, Fulton, Independence, Izard, Jackson, Sharp and White Counties. J. C. Cleveland, Councilor, Bald Knob.

Third District.—Arkansas, Cross, Lee, Lonoke, Monroe, Phillips, Prairie, St. Francis and Woodruff Counties. H. H. Rightor, Councilor, Helena.

Fourth District.—Ashley, Bradley, Chicot, Cleveland, Desha, Drew, Jefferson and Lincoln Counties. J. M. Lemons, Councilor, Pine Bluff.

Fifth District.—Calhoun, Columbia, Dallas, Lafayette, Ouachita and Union Counties. Foster Jarrell, Councilor, Huttig.

Sixth District.—Hempstead, Howard, Little River, Miller, Nevada, Pike, Polk and Sevier Counties. J. H. Weaver, Councilor, Hope.

Seventh District.—Clark, Garland, Grant, Hot Springs, Montgomery, Saline and Scott Counties. J. E. Jones, Councilor, Sheridan.

Eighth District.—Conway, Johnson, Faulkner, Perry, Pulaski, Yell and Pope Counties. Earl H. Hunt, Councilor, Clarksville.

Ninth District.—Baxter, Boone, Carroll, Marion, Newton, Searcy, Stone and Van Buren Counties. Leonidas Kirby, Councilor, Harrison.

Tenth District.—Benton Crawford, Franklin, Logan, Sebastian, Washington and Madison Counties. J. T. Clegg, Councilor, Siloam Springs.

HONOR ROLL

Arkansas County

DE WITT—Arthur Gibbon Kelley.

Benton County

BENTONVILLE—Kenneth Bowles Huffman. GARFIELD—Guy Hodges. GENTRY—Raphael William Steele. ROGERS—Ray Ralph McHenry.

SILOAM SPRINGS—John Lewis Smiley.

Boone County

EVERTON—Burpee Cooper. HARRISON—Nim Lon Barker; Alexander Crump Kirby.

Bradley County

WARREN—Josephus Johnston Sherrill.

Carroll County

EUREKA SPRINGS—Henry Pace; James Emory Phillips; Albert Evans Tatman. GREEN FOREST—Fred Raines Morrow; Erton E. Poynor.

Clark County

AMITY—Fred Somervell Watson. ARKADELPHIA—Cyrus C. Brown; Julius Sheppard Moore; Charles Kennard Townsend.

Clay County

PIGGOTT—Claude Wilson Drace. RECTOR—Moses Cline Hughey; Walter Oling Parrish. SUCCESS—Richard Calvin Lynch; Martin Van-Buren Waddle.

Cleburne County

HEBER SPRINGS—Horace E. Ruff.

Columbia County

MAGNOLIA—Hugh E. Longino.

Conway County

MORRILLTON— ed Bearden.

Craighead County

BAY—Hugh LaFaye. e Raines. JONESBORO—Floyd Clardy; Luther Mace Lile; Wm. Hubert Moreland; James Wilson Ramsey. MONETTE—Ira Wall Ellis.

ARKANSAS

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Arkansas	1,000	37.0	18,388	681	27					
Ashley	940	27.6	29,307	861	27	..	12	20	11	1
Baxter	586	36.6	11,185	699	34	..	21	23	16	..
Benton	876	15.6	34,688	617	16	..	6	9	2	..
Boone	608	19.6	14,318	461	56	1	17	36	26	5
Bradley	659	26.3	18,071	722	31	..	15	17	16	3
Calhoun	629	44.9	10,883	777	25	..	13	17	8	1
Carroll	641	26.7	16,829	701	14	..	5	8	3	..
Chicot	607	21.6	27,431	979	24	1	13	16	14	5
Clark	882	15.4	25,437	446	28	..	13	26	11	..
Clay	654	16.7	29,386	753	57	..	20	28	9	4
Cleburne	596	27.0	13,563	616	39	..	26	28	12	5
Cleveland	603	40.2	14,838	989	22	..	7	15	1	1
Columbia	785	23.7	26,185	793	15	..	6	10	6	..
Conway	563	21.6	24,886	957	33	..	14	26	9	1
Craighead	687	12.4	33,555	610	26	1	13	20	6	1
Crawford	593	20.4	25,892	892	55	..	35	38	23	6
Crittenden	582	23.2	28,227	1,129	29	..	11	18	8	..
Cross	619	30.9	16,226	811	25	..	19	23	9	5
Dallas	679	30.8	13,426	610	20	..	10	13	1	..
Desha	747	37.3	18,021	901	22	1	12	17	10	..
Drew	847	30.2	23,792	849	20	..	13	16	9	3
Faulkner	651	15.1	25,845	601	28	..	19	23	17	4
Franklin	606	22.4	23,004	852	43	..	18	29	14	..
Fulton	625	52.0	12,193	1,016	27	2	11	19	13	1
Garland	631	4.8	34,781	296	12	1	4	7	..	1
Grant	637	39.8	10,705	669	131	1	69	99	62	10
Greene	561	16.5	28,870	849	16	..	4	9	5	..
Hempstead	727	18.1	31,339	783	34	..	20	27	21	2
Hot Spring	613	34.0	16,681	926	40	..	14	24	16	2
Howard	602	25.0	18,958	789	18	..	12	14	8	1
Independence	762	18.5	26,397	643	24	..	11	16	6	..
Izard	583	25.3	15,331	666	41	..	19	25	18	1
Jackson	634	18.6	27,236	801	23	..	10	17	4	..
Jefferson	903	10.7	61,320	730	34	..	25	28	15	1
Johnson	675	20.4	21,341	646	84	1	47	63	31	6
Lafayette	525	23.8	14,946	679	33	1	13	23	17	..
Lawrence	592	13.1	22,562	501	22	..	18	13	7	2
Lee	601	25.0	27,786	1,157	45	..	15	32	20	2
Lincoln	571	35.6	16,380	1,020	24	..	9	20	11	2
Little River	546	18.8	13,597	468	16	..	13	13	7	1
Logan	726	15.0	30,173	628	29	1	14	20	8	1
Lonoke	794	17.6	31,954	710	48	..	21	33	21	5
Madison	836	41.8	16,056	802	45	..	21	30	19	2
Marion	646	53.8	10,203	816	20	..	4	14	6	..
Miller	623	19.4	21,012	656	12	..	7	5	2	1
Mississippi	792	16.5	40,748	807	32	..	11	15	14	4
Monroe	603	18.9	22,164	1,385	48	..	33	43	23	8
Montgomery	891	52.4	13,346	785	16	..	11	15	13	3
Nevada	620	25.8	21,342	889	17	..	8	13	1	..
Newton	846	76.9	10,612	964	24	..	17	21	9	..
Ouachita	733	30.5	22,417	934	11	..	4	6	1	..
Perry	552	21.2	10,940	420	24	..	15	20	12	1
Phillips	692	15.0	38,625	839	26	..	12	14	5	2
Pike	601	24.0	14,217	568	46	..	29	39	25	7
Poinsett	721	30.0	17,001	708	25	..	9	15	2	..
Polk	846	30.2	17,216	614	24	..	15	19	4	1
Pope	828	18.4	26,580	590	28	1	11	18	8	1
Prairie	675	29.3	15,296	665	45	..	23	32	12	2
[1]Pulaski	747	3.1	106,083	453	23	1	7	16	6	1
Randolph	654	21.0	20,322	652	234	4	139	196	15	49
Saint Francis	628	20.2	26,483	854	31	..	14	21	7	1
Saline	775	36.9	17,112	814	31	..	16	25	16	5
Scott	970	38.8	15,520	620	21	..	9	16	10	4
Searcy	673	30.5	16,894	767	25	..	10	15	..	..
Sebastion	531	5.4	63,478	644	22	..	7	16	7	1
Sevier	572	22.8	16,818	672	97	..	48	62	43	9
Sharp	609	60.9	11,688	1,168	25	..	12	16	13	1
Stone	611	87.2	9,563	1,366	10	..	8	7	2	..
Union	1,048	30.8	36,728	1,080	7	..	2	4	1	..
Van Buren	730	38.4	15,179	798	34	..	27	30	12	2
Washington	955	17.3	33,889	616	19	..	6	11	..	2
White	1,037	19.3	31,281	590	55	1	17	34	26	5
Woodruff	577	24.0	22,781	949	53	..	20	34	23	6
Yell	955	22.2	28,930	672	24	..	16	22	14	1
					43	..	18	27	5	..
Totals	52,525	20.3	1,776,475	6,867	2,587	18	1,282	1,849	887	202

1. Includes Little Rock, population 55,158; physicians 186 [M.R.C. 44].

Crittenden County

EARL—Samuel McAlister Mauney; Herbert Shirley Watson. PROCTOR Thomas Wilson. SEYPPEL—Henry Pender Ledford. TURRELL—Floyd Webb.

Desha County

DUMAS—Alphonso Isom; Wm. Golladay O'Neal. McGEHEE—R. Newman Brown.

Drew County

MONTICELLO—James Milton Best; Edward Ralph Cotham; Mardello Yates Pope. PLANTERSVILLE—John Samuel Wilson.

Franklin County

BRANCH—Wm. J. King.

Fulton County

MAMMOTH SPRINGS—Arch Sylvester Chapman.

Garland County

HOT SPRINGS—John William Rush; John Graydon Cullins; Maurice Farrish Lautman; William Kate Smith; Frederic Earl Diemer; Allen C. Prichard; Harry Morris Strachan; Grayson Emery Tarkington; Loyd Thompson; Henry King Wade.

Greene County

PARAGOULD—Erasmus S. Baker; Frank Lawrence Castleberry.

Hempstead County

HOPE—Victor K. Allen; Robert Ellis Weaver.

Hot Springs County

DONALDSON—Morgan C Berry.

Independent County

BATESVILLE—Charles Garland Hinkle.

Jackson County

TUCKERMAN—Oscar Aden Jamison.

Jefferson County

HUMPHREY—Thomas Dobbins. PINE BLUFF—John Short Jenkins; J. F. Lieberman; William Thomas Lowe; J. William Scales; Loren Wallin.

Lafayette County

LEWISVILLE—Joseph R. Smith. STAMPS—Carland A. Ellis.

Lawrence County

RICHWOODS—Wm. Henry White. WALNUT RIDGE—George Maxey Watkins.

Lee County

HAYNES—William Robert Haynie. MARIANNA—Mac McLendon.

Lincoln County

VARNER—Anthony Claudius Thiolliere.

Little River County

WILTON—Arley Doyne Cathey.

Logan County

BOONEVILLE—Forrest P Baker; Austin R. Hederick. DRIGGS—Felton William Laudrum. SCRANTON—Arless A. Blair; Everett Newton Lipe

Lonoke County

CABOT—Paschal Josephus Park. ENGLAND—Cap. J. Carter.

Marion County

RUSH—Sherod A. Drennen.

Miller County

TEXARKANA—Theron Earle Fuller; William Hibbetts; Perry Crittenden Williams; Edwin Berry Buchanan.

Mississippi County

BARFIELD—Cinc'nnatus Hine Miller Mason; Wheeler Scott McCall. BASSETT—Oscar Barksdale. BLYTHEVILLE—Wm. *Thomas Polk*; Max Overton Usrey. CLEARWATER—Amos Elmer Robinson. OSCEOLA—Wilbur Russell Harwell, William Joplin Sheddan.

Monroe County

CLARENDON—Matt Francis Huston; Philip Emerson Thomas Jr. HOLLY GROVE—Paul Edward Johnson.

Ouachita County

CAMDEN—Braxton Victor Powell.

Perry County

APLIN—Ervin L. Matthews. CASA—Hugh C. Brooks.

Phillips County

HELENA—James William Butts; Aris Joseph Samuel Davidson; Wellington Cox MARVELL—Robert *Cain* Meadors; George Edward Penn. WABASH—George Washington Eubanks. WEST HELENA—Henry Watkins Allen Lee.

Poinsett County

LEPANTO—Chas. Elbert Byler.

Polk County

MENA—Elmer Ellsworth Holt.

Pope County

ATKINS—Arthur Ceberry Haney. RUSSELLVILLE—James Fred Hays.

Prairie County

LOOKOUT—Garfield B. Morre.

Pulaski County

[illegible] w; *Lincoln Humphreys*; William Elvage Mc-
L[illegible] [illegible]OTS—John M. Hewitt.
P. [illegible] Franklin Ball; Edwin Page Bledsoe; Sterling [illegible] Gardiner.
[illegible] Allaire Dashiell; Edward Owens Day; Robert Manley Eubanks.

Wayne Neal Freemyer; Dewell Gann Jr.; Davis Wolf Goldstein.

Alfred Gilliam Hearn; Hugh B. Henry; Sherman Booker Hickman; Homer A. Higgins; Shelbey Boone Hinkle; Glen McK. Holmes.

Alvin Leondus Jobe; Roscoe Conklin Kory; Dee C. Lee.

Guy Arnold McCormack; Martin P. McNeil; Clinton P. Meriwether; Arthur Lee Mobley; Henry E. Mobley; Robert B. Moore; Nolie Mumey; Patrick Murphey; Mahlon Dickerson Ogden.

Lee Vallette Parmley; Feaster LeGrand Proctor; Ernest Whitfield Prothro.

Nicholas William Riegler; Wallace Dickinson Rose; Scott Clark Runnels.

Rector Philip Sheets; William Anderson Snodgrass; Alvin Weil Strauss.

Francis Vinsonhaler; Perry V. Wagley; Fay Powell Washington; Asa C. Watson; James R. Wayne; Raymond Clyde Wolfe; Geyer Chauncey Wood.

SCOTT—John Bridger Wells.

Randolph County

O'KEAN—Marshall Allen.

Saline County

BAUXITE—Robert H. Bryant; Homer Scott. BENTON—Sidney R. Crawford. HASKELL—Boulanger Gwaltney.

Searcy County

MARSHALL—Isaac Striman Butler.

Sebastian County

BONANZA—Rufus Francis Parks. FORT SMITH—Carl Sperry Bungardt; Walter G. Eberle; Miles Everett Foster; Arthur Franklin Hoge; Constant P. Wilson Jr. HARTFORD—George McKellar; Horace Porter Routh. MANSFIELD—John Royston Brown.

Sevier County

LOCKESBURG—James Fleming Musser.

St. Francis County

COLT—Newman Burgess Burch. FOREST CITY—David Oliver Bridgeforth. HUGHES—Edward Wesley Pollard. WIDENER—Woodbye Albert Winter; Ernest Darnall.

Union County

HUTTIG—Foster Jarrell. WESSON—James Wiley Slaughter.

Van Buren County

CLINTON—Robt. Marvin Hunter. SHIRLEY—James Fletcher Poe.

Washington County

ELM SPRINGS—Horace William Graves. EVANSVILLE—Bert Cecil Hiner. FAYETTEVILLE—Donald Ray Wilson. SPRINGDALE—Otto Christian WINSLOW—Thos. Ellsberry Gray.

White County

BEEBE—W H Abington; Bernie F. Jungkind. EL PASO—W. H. Bruce. JUDSONIA—Wylie Robert Felts. SEARCY—Samuel T. Tapscott Jr. WEST POINT—James Madison Wellborn.

Woodruff County

GREGORY—Frank Carroll Maguire.

MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

Officers 1918-19

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John H. Graves, First Vice President.....................San Francisco
Ferdinand Stabel, Second Vice President.........................Redding
Saxton T. Pope, Secretary................Butler Bldg., San Francisco

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C. G Kenyon, Chairman, San Francisco.

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First District—San Diego, Riverside, Orange and San Bernardino counties. C. Van Zwaluwenburg, Councilor, Riverside.

Second District.—Los Angeles, Ventura, Santa Barbara and Kern counties. E C Moore, Councilor, Los Angeles.

Third District.—San Luis Obispo and Monterey counties. T. C. Edwards, Councilor, Salinas.

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Ninth District.—Del Norte, Humboldt, Lake, Marin, Mendocino, Napa, Sonoma, Solano and Trinity counties. A. W. Hoisholt, Councilor, Napa.

HONOR ROLL

Alameda County

ALAMEDA—Wilfred F. Beerman; James Kish Hamilton Jr.; William Tappen Lum, Leland O. W. Moore; Herbert Piercey Nottage.

BEREKELEY—Warren Barrett Allen; Edward Cline Bull; John W. Callnon, Harvey Philip Charles; Mendel Cohn; James Gordon Cumming; Samuel Robert Downing; Henry Stone Forbes; Harry Emerson Foster; Fredk Parker Gay; Harry Newton Kierulff; Robert Thomas Legge; Arthur Merrill McIntosh; Albert Mauson Meads; Ernest Howard Pape; Wibur Augustus Sawyer; Walter Reese Scroggs; Richard Watts Soper; Herbert Sedgefield Thomson.

HAYWARD—Charles John Harbeck. LIVERMORE—Paul Egan Dolan; Clifford W. Mack.

HAYWARD—Howard Charles Crum.

OAKLAND—John Peter Byrnes; Wilfred E. Chambers; Cornelius Thomas Devine; William Lawrence Dunn; Henry M. Fine; Louis Alliston Frary; Channing Hall; Gordon Batteile Hamilton; *John Theodore Kergan*; Alva Frank Maine; Herbert Arthur Makinson; Donald Murdock McRae; William Patton Milliken; Vaclav Horace Podstata; Alvin Powell; John Morse Rehfisch; Bruno Francis Sandow; Melvin Arthur Shade; Don D. Weaver.

SAN LEANDRO—Gail Fehrenson; Wm. R. Leahy; William C. Lynch; Clarence Alfred Wills.

Amador County

IONE—George Giles Hawkins.

Butte County

GRIDLEY—Elmer Ellsworth Martin. OROVILLE—Frank Moore Whiting.

Contra Costa County

BYRON HOT SPRINGS—James Milton Smithwick. HERCULES—Frank Paul McManus. MARTINEZ—John L. Beard; Earl Berton Fitzpatrick PITTSBURGH—Selby Harold Marks. RICHMOND—Clark L. Abbott; William James Caesar; Irwin B. March; Walter Charles Smallwood.

El Dorado County

PLACERVILLE—Luther M. Leisenring.

Fresno County

FOWLER—Henry Ehlers. [illegible] anier Adams; Harry Judge Craycroft; William [illegible] Jamison Staniford; Peter Arthur Tobin; Donald Payson Webster. KERMAN—David E. Arnold; John Hugo Schaeffer

Glenn County

ORLAND—Dale L. Martin; Frank Hay Lawson.

CALIFORNIA

County	Area, Square Miles	Sp. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
[1]Alameda	732	1.1	330,758	626	528	54	210	378	248	47
Amador	601	50.0	9.086	757	12	..	7	11	3	1
Butte	1,722	45.3	34,734	914	38	3	17	21	11	2
Calaveras	1,027	128.3	9.171	1,146	8	..	3	6	2	..
Coluso	1,140	162.8	8,000	1,142	7	..	4	5	2	..
Contra Costa	714	15.1	42,000	893	47	2	23	37	32	9
Del Norte	1,024	512.0	2,424	1,212	2	..	1	1	2	..
Eldorado	1,753	219.1	7,492	936	8	..	3	7	4	1
Fresno	5,950	44.7	103,245	777	133	8	61	101	69	9
Glenn	1,259	96.8	8,648	665	13	1	4	6	9	2
Humboldt	3,634	86.5	38,787	923	42	1	12	35	31	4
Imperial	4,089	107.6	22,286	586	38	3	20	33	21	3
Inyo	10.019	834.9	8,871	739	12	1	7	10	3	2
Kern	8,003	131.1	53,215	872	61	3	30	50	37	9
Kings	1,159	165.5	20,872	2,981	7	..	14	16	8	1
Lake	1,278	117.1	5,526	502	11	..	1	7	1	2
Lassen	4,531	566.3	5.014	626	8	..	10	7	4	1
[2]Los Angeles	4,067	2.6	747,816	411	1,549	122	935	1,129	798	220
Madera	2,112	176.0	9,831	819	12	1	5	10	5	..
Marin	529	13.0	37,985	1,151	33	1	18	25	18	8
Mariposa	1,463	444.3	3,956	1,318	3	..	..	3	..	..
Mendocina	3.453	111.3	26,458	853	31	2	16	22	18	2
Merced	1,995	68.7	19,479	671	29	9	12	11	5	3
Modoc	3.823	637.1	7,005	1,167	6	..	5	4	1	3
Mono	3,030	3030.0	2,042	2,042	1	..	1	1	..	..
Monterey	3,330	104.0	27,624	834	32	5	10	18	19	2
Napa	783	12.2	22,244	397	56	5	13	25	16	2
Nevada	974	88.5	14,955	1,359	11	..	7	10	10	1
Orange	795	9.0	45,195	525	86	2	29	51	38	6
Placer	1,395	45.0	20,025	678	31	2	15	19	13	4
Plumas	2.594	235.8	5,699	519	11	..	6	9	4	1
Riverside	7,240	99.6	46.957	594	79	7	26	54	42	10
[3]Sacramento	983	5.9	83,784	507	165	3	60	97	73	14
San Benito	1.392	135.6	9,068	824	11	..	4	10	3	..
San Bernardino	20,157	140.7	77,711	539	144	22	49	92	63	18
[4]San Diego	4,221	57.0	82,288	1,112	74	20	89	44	40	38
[5]San Francisco	43	0.03	471.023	379	1,241	126	710	910	638	214
[6]San Joaquin	1,448	14.5	61,882	618	100	4	40	64	61	7
San Luis Obispo	3,331	101.0	21,387	648	33	1	15	23	17	4
San Mateo	447	12.4	37,162	1,032	36	4	39	56	19	5
Santa Barbara	2,740	45.6	34 164	569	60	2	20	36	35	8
Santa Clara	1,328	7.8	100.563	592	170	22	59	110	69	19
Santa Cruz	435	19.7	29.517	655	45	5	14	29	22	5
Shasta	3,858	183.7	20,088	956	21	..	7	16	11	1
Sierra	923	184.6	4,156	831	5	..	2	6	2	1
Siskiyou	6,256	208.5	20,142	671	30	1	13	25	20	1
Solano	822	23.3	20,053	859	35	2	30	31	21	5
Sonoma	1,577	22.5	55,630	794	70	7	29	50	39	6
Stanislaus	1,450	29.0	31,990	639	50	6	20	34	27	4
Sutter	608	67.5	6,650	738	9	..	3	4	3	..
Tehama	2.893	160.7	11,697	647	18	2	2	11	9	2
Trinity	3,166	633.2	3,301	660	5	..	1	5	3	3
Tulare	4,856	95.2	47,896	939	51	3	30	38	37	6
Tuolumne	2,190	183.0	9,979	831	12	1	2	7	7	1
Ventura	1,878	60.5	21,252	685	31	..	11	24	21	7
Lolo	1,014	46.1	14,150	643	22	2	8	13	15	1
[7]Yosemite	.....	.....	.....	...	1	..	1	1	..	..
Yuba	639	53.2	11,080	923	12	1	6	8	7	3
Totals	155,652	28.8	3,038,322	926	5,396	446	2,956	3,698	2,736	728

Alpine county has no physicians within its territory and is not listed in this table.

1. Includes Berkeley, population 54,879; physicians 119 [M.R.C. 17], and Oakland, population 190.803; physicians 325 [M.R.C. 19].
2. Includes Los Angeles, population 475,367; physicians 1.333 [M.R.C. 165], and Pasadena, population 43,859; physicians 130 [M.R.C. 15].
3. Includes Sacramento, population 64.806; physicians 108 [M.R.C. 13].
4. Includes San Diego, population 51,115; physicians 190 [M.R.C. 33].
5. Includes San Francisco, population 448,502; physicians 1,239 [M.R.C. 210].
6. Includes Stockton, population 34,508; physicians 65 [M.R.C. 5].
7. Yosemite National Park.

Humboldt County

EUREKA—Thomas Robert Petch; Carl Wallace. FERNDALE—Francis Marion Bruner; Greg Hoskins.

Imperial County

CALEXICO—George Newlove; Walter Leon Elis. EL CENTRO—Charles Stanford Brooks.

Inyo County

BIG PINE—John Royal Buckingham. LONE PINE—Mark Angle Williamson.

Kern County

BAKERSFIELD—George Marion Bumgarner; Clarence William Kellogg; Malcolm Yeaman Marshall; Liva Charles McLain; Homer Rogers; Joseph Kent Smith. McFARLAND—John Nelson Blood.

McKITTRICK—Samuel Bryan Degman; Julius R. Hamilton.

Kings County

HANFORD—Budd Robbins.

Lake County

BARTLETT SPRINGS—Reuben H. Hunt.

LAKEPORT—Ernest Clarence Griner.

Lassen County

MADELINE—Lynn Carl Smith.

Los Angeles County

ARTESIA—Edward Henry Diehl. BURBANK—Harry X. Cline. COVINA—Wallace Allison Reed. CULVER CITY—Robert Maxwell Jones; Bryant Robert Simpson. DOWNEY—David Burdette Zbinden. EL MONTE—Joseph Saylin. GARDENIA—Francis Belmont Dwire. GLENDALE—John Warren Bardill. GLENDORA—Harrie Chamberlin. HAWTHORNE—Allan Napier Kerr. INGLEWOOD—Louis Nels Anderson. LA MANDA PARK—Owen Melville Harrah. LANKERSHIM—Elliott Plummer Smart.

LONG BEACH—Robert Metcalf Dodsworth; Harry H. Heylmun; Leo De Scott; Charles Henry Miller; Roderick Hoffman Shippey; George Tupper.

LOS ANGELES—Charles Blackstone Adams; Eliot Alden; Albert Allen; Carlton Stewart Allen; Samuel Mitchell Alter; Francis Xavier Ammann Jr.

LeRoy Harrison Bailey; Claudius Ballard; Fred J. Barnet; Winfield Lincoln Bartow; Samuel G. Bay; Wendell P. Blake; William Otis Blanchard; Phil Boller; Karl Marx Bonoff; Frederick A. Bonthuis; Fred Phelps Bowen; William B. Bowman; John Ira Boyer; Walter Vernon Brem; Hersel Eugene Butka; Lawrence J. Butka; Oliver William Butler; Ralph L. Byrnes.

John Carling; Ray Alden Carter; William James Chambers; Albert Charlton; Guy Cochran; Frederick Amasa Coler; Clare Pattee Conroy; James R. Cowan; Edward Rockford Cox; Egerton L. Crispin; Philip John Cunnane; Thomas B. Cunnane.

William Hardy Daniel; Bertram Charles Davies; Charles W. Decker; Frank Raymor de la Vergne; Karl Lyonel Dieterle; Robert Black Dimon; Clarence Wythe Dodge; Wallace Dodge; Normand F. Dorn.

Joseph Gamewell Evans; John Eugene Fahy; Fred Durfee Fairchild; D. C. Farnsworth; Abraham Feldman; John C. Ferbert; James Tucker Fisher; William Vare Chalmers Francis; David Fredericks; Chas. E. Freedman; Donald J. Frick; Lowell Chester Frost; Dudley Fulton.

Hiram Gallagher; Charles Louis Garvin; Albert Carl Germann; James Peter Gillis; Albert Sidney Gough; *William Lewis Grant.*

Robert Kels Hackett; Ralph Hagen; James Sprunt Hall; George Louis Alexis Hamilton; Roy Wallace Hammack; Lasher Hart; Truston Mitchell Hart; Miles Aiken Heffelfinger; James Walter Heustis; Robert Burns Hill; Walter Martin Holleran; Foster Miller Hull; Daniel Louis Humfreville; George Graham Hunter.

Clarence Edward Ide; John Curtis Irwin; Nilton D. W. Jeffs; Simon Henry Jesburg; Louis Josephs; Guy Leslie Kay; Walter P. Keene; Henry Sheridan Keyes; Walter Christian S. Koebig; Harry Haynes Koons.

Walter Eber Leonard; Fred Ellsworth Lettice; L. R. Linhart; Lorenzo Foster Luckie; Earl Lane Lupton; Jerre G. Lynch.

Lloyd Russell Mace; Chester Lea Magee; Harry George Marxmiller; Norman M. McClelland; Clark Loring McClish; Wm. Raymond McDannell; James Henry McLaughlin; Thomas R. McNab; Frank W. Miller; James Lewis Miller Jr.; Egbert Earl Moody; Edward Clarence Moore; J. Ross Moore; Wayland Augustus Morrison; Lewis B. Morton.

William H. Olds.

Paul Alfred Opp; Thomas Janes Orbison; Thomas William O'Reilly.

Arch Marty Paulson; Arthur Lewis Peter; Giles Scammon Porter; Russell Warren Prince; Carl Wheeler Rand; Fred Sylvester Ray; George William Reyer; William W. Richardson; Edwin Jules Riche; Paul Brandt Roen; Roy Frederick Ruth.

Arnold E. Saverein; George Frederick Schenck; Arnold Max Scholz; Joseph L. Schwartz; Paul Kibbe Sellow; John Russell Shea; Bernard Shelton; Leon Shulman; Fred Cazeoux Shurtleff; Rea Smith; Albert Soiland; James Steinberg; Charles Gaskill Stivers; Byron Polk Stookey; Leonard Stovall; John Swancott; Bret Albert Swartz; Percy Edward Swift.

Robert L. Tebbett; Emil Francis Tholen; Frank Thomas; James Thornton; Delos Packard Thurber; Frank M. Trout; Kenneth Beymer Turner; Arthur Maurice Tweedie.

Jean J. A. Van Kaathoven; Harry Voorhees; George Phillips Waller Jr.; Frederick Beall West; Sydney Vatelle West; Charles Green Wharton; Sandford Blanding Whiting; James Thomas Whittaker; Edwin Hardin Wiley; Clair Wilson; John Cree Wilson; Charles Stephen Young.

LOS ANGELES—Charles Frederick Curtis; William Allan Swim; Stephen Yerkes Van Meter; Asa George Woodward.

MONROVIA—Francis M. Pottenger; Lewis Durkee Remington. NORWALK—Preston Stanley Kellogg; Charles E. Sisson. OCEAN PARK—Oscar Anderson.

PASADENA—John H. Breyer; Joseph Dayton Condit; Frank Moore Connor; Henry Ambrose Hoit; Robt. K. Macklen; Fitch C. E. Mattison; Samuel Jones Mattison; Alva Dutton Stearns McCoy; Edwin Harbaugh McMillan; James Ross Reed; Levi Lore Riggin; William Humes Roberts; Henry Howard Sherk; Robert L. I. Smith; Edward Everett Tredway. PATTON—Emil William Meyer.

POMONA—Dumont Dwire; Homer Carlton Seaver. SAN GABRIEL—Oto David Chamley. SAN PEDRO—Reuben H. Hunt; Wm. Day Moore. SANTA MONICA—John A. Balsley; Hugh King Berkley. SAWTELLE—August Benjamin Hromadka; George Anderson Fielding. SOLDIERS' HOME—Kay Walter Karras. SOUTH PASADENA—Russell Ross Burt; Fred Detmar Northup. VENICE—Arthur Cooper Smiley. WHITTIER—Horace Plummer Wilson.

ALHAMBRA—James Archibald Keown.
SOLDIERS HOME—Walter D. Bishop.

Marin County

FORT McDOWELL—Eugene L'Hommedieu Swift, Richard Carl Dienst. MILL VALLEY—Oscar Park Stowe; Lemuel Alfred Anthony. SAN QUENTIN—John Edwin Paulson. SAN RAFAEL—Rafael Gabriel Duffley; James Stone Waid. SAUSELITO—Allen H. Vance.

Mendocino County

ALBION—Homer Holsinger Wolfe. WILLITS—Raymond Arthur Babcock.

Merced County

LOS BANOS—Fred F. Sprague. MERCED—Edwin Ray Fountain; Daniel Webster Zirker.

Modoc County

ALTURAS—Walter Edwin Coppedge; Alexander Gibson. *EAGLEVILLE—Milo Russell Kennedy.*

Monterey County

PACIFIC GROVE—Frank Russell Hart. SALIVAS—William Rollin Reeves.

Napa County

CALISTOGA—Cyril Ettrick Lewis. OAKVILLE—Samuel Chester Leonhardt.

Nevada County

GRASS VALLEY—Paul D. Barnes.

Orange County

FULLERTON—William Harold Wickett. GARDEN GROVE—Oscar Ollie Young. HUTINGTON BEACH—John Edwin McKillop. ORANGE—Willis Henry Hall; Martin Passmore Hamrick. SANTA ANA—Frank E. Winter.

Placer County

ALTA—Robert Carnahan Kirkwood. COLFAX—Henry Thomas Rooney. LINCOLN—Orra Crosby Hyde; Frank Edward McCullough.

Plumas County

PORTOLA—Samuel McCoy Sproat.

Riverside County

BLYTHE—Frank Alexander Lowe. CORONADO—Robert Smart. RIVERSIDE—Bon O'Driscol Adams; Arthur Leon Brown; Wendell A. Jones; George Carl H. McPheeters; William Wallace Roblee; William Donald Rolph; George Hamilton Trevelyan; Clark Denike Fanton.

Sacramento County

FOLSOM—Myer Jacob Wahraftig. SACRAMENTO—Clarence Lavan Bittner; Howard McDougall Cameron; Joseph William Crawford; A. B. Diepenbrock; Nathan George Hale; Marion Reginald King; Edward S. Loizeaux; Arthur Lee Munger Jr.; Orris Reid Myers; James H. Parkinson; James Roe Snyder; Warren Willis Strange; Eldridge C. Turner. WALNUT GROVE—Ernest Everett Wilson.

San Bernardino County

LOMA LINDA—Alton De Forest Butterfield; Charles William Harrison; Fred E. Herzer. NEEDLES—Arthur Edward Boland. ONTARIO—Charles Andrew Warmer PATTON—Emil William Meyer; Victor Parkin. REDLANDS—Charles Edward Ide. SAN BERNARDINO—Louis Milton Coy; Thomas Richard McHugh; John Herman Meyer; Henry William Mills; Ralph Merle Smith; Colin Campbell Owen; Gilbert Roy Owen TRONA—Homer Richard Evans. UPLAND—John B. Craig.

San Diego County

FALLBROOK—John C. Graffin.

LEMON COVE—Morton William Fraser; Robert Bruce Montgomery. LINDA VISTA—John Peachay Jones.

SAN DIEGO—Alfred Edward Banks; Arthur N. Bobbitt; Alfred Byars; Ross S. Carter; James F. Churchill; Vernon G. Clark; Gordan Courtenay; Francis Jordan Dingeman; Joseph Foster Grant; Maynard Caldwell Harding; Gilbert Franklin Harris; Arthur John Holeton; Rutherford Buchard Irones; Robert S. Irvine; James Albert Jackson; Lyell C. Kinney; Thomas C. Little; Harry Clifford Loos; Allyn Claude Magee; Thomas B. McCowan; Frederick W. Muller; Bernard O'Neill; Joseph Andrew Parks; Thomas C. Pounds; William R. Ream; Frederick J. Smith; Frank W. H. Taylor; Robert W. Thomas; Paul Wegeforth; Andrew Benj. Wessels; Thomas F. Wier; Arthur John Wilkinson; George Barrow Worthington.

TECATE—Edward H. Jordan.

San Francisco County

ALCATRAZ—Herbert William Yemans. FORT MILEY—Justus M. Wheate. SAN FRANCISCO—Le Roy Chas. Abbott; Henry Abrahm; Bertram F. Alden; Frederick Emerson Allen; Ewald H. Angermann; Frank Ashmore.

Walter Isaac Baldwin; Nathan Powell Barbour; Hans Barkan; George D. Barnett; Shadworth O. Beasley; Joseph L. Bell; Gustav Julius Bergener; Elbridge John Best; William Archdall Boyle; Frank Philip Brendel; Frank J. Breslin; Joseph Richard Brown; Frederick Bryant; William A. Bryant; Sterling Bunnell; Edmund W. Butler.

Rawlins Cadwallader; Erwin Julian Casper; Donald Cass; Paul Castelhun; Joseph Henry Catton; William Chamberlain; John F. Chapman; Ernest Dwight Chipman; William Redwood; Price Clark; Ernest Winton Cleary; Herbert Jacob Cohn; Orrin Simeon Cook; Chas. Alfred Craig; Lloyd Benjamin Crow; Charles Cross.

Arthur Lee Davis; William B. Deas; John Paul Degnan; Victor d'Ercole; Richard L. Dowdall; Hiram B. Duncan; George Michael Dunne.

Earl Eames; Leo Eloesser; Leonard Wheeler Ely; Frank S. Emmal; Michael Henri Etcheverry.

Harold Ernest Faber; Ernest Henry Falconer; Walter Wallace Fenton; Bruce Ffoulkes; Roy L. Fielder; Arthur Lawrence Fisher; Thos J. Flynn; Cuthbert Merwin Fleissner; Howard Webster Fleming; Harold Augustus Fletcher; Paul J. Flory; Meyer Bernard Fractman; Marius Andre Francoz; *Jule B. Frankenheimer*; John Percival Frizell.

Frederick Mears Gedney; Clain Fanning Gelston; Edward Joseph Ghidalla; Morton Raymond Gibbons; Arthur C. Gibson; Frank Robert Girard; Cosmos Andrew Glover; Arthur Goettsch; Louis Jean Ernest Gouguet; Jonathan Green; Earl Norman Greenwood; Charles Francis Griffin.

Sylvan Lewis Haas; John George Harrington; Chester S. Harris; Ernest Downing Hatch; Harrison Morton Hawkins; George Kramer Herzog; Albion W. Hewlett; Harold P. Hill; Frank Munson Hillyer; Obe Haight Hoag; Herman Verplanck Hoffman; Laurence Harold Hoffman; Thomas G. Holmes; Henry Wells Horn; Louis Phillippe Howe; Robert Cravens Howe; Walter A. Howell; George Rucian Hubbell; Thomas Eugene Hunt; Thomas W. Huntington; Robert Koehler Hutchings.

Thomas G. Inman; William John Jackson; Emil O. Jellinck; Smith Steinberger Johnson; Walter S. Johnson.

Joseph James Kavanagh; William Elwin Kay Jr.; William John Kerr; Eugene Sterling Kilgore; Lester Kimberlin; Frederick W. Kroll; Boyd M. Krout; Harry P. Krummes.

Harry L. Langenecker; Charles Nelson Leach; Claude Clay Leaverton; Cory Childs Ledyard; T. B. W. Leland; Charles Gabriel Levison; Frederick Clinton Lewitt; Melville Hammond Long; Thomas Sherman Long.

George Jewett McChesney; Horace Hoagland McCoy; Albert B. McKee; Arthur Clinton McKenney; Raymond B. McNamara; Albert H. McNulty; Hiram Edghr Miller; A. J. Minaker; Harry S. Moore; William Leander Moore; Charles Espey Mordoff; Norman D. Morgan; Joseph Mora Moss; Vinton A. Muller; William Everett Musgrave; Stanley L. Myre.

Howard Christian Naffziger; Robert Reid Newell; Alfred James Norman; Archibald Angus Norton; Earl William O'Donnell; Harry R. Oliver.

Rey Harvey Parkinson; Charles Arthur Pauson; Robert Allen Powers; Lionel David Prince; Harry Jerome Pruett; George William Purcell; Clarence Quinan.

Jay Marion Read; Frank Birckhead Reardan; Alfred C. Reed; Arthur Henry Reinstein; John Jacob Richstein; Emmet Rixford; John Wirt Robinson; Thomas Bryan Roche; Joseph Henri Denis Roger; Louis David Roncovieri; Howard Edwin Ruggles; Russell Colquhoun Ryan.

William Ashford Sampson; Walter F. Schaller; Herman J. Schlageter; Charles E. Schwartz; Martin Joachim Seid; Leon Gross Seidenfeld; Clyde Everett Shedd; Harry Mitchell Sherman; George Franklin Shiels; John Wilson Shiels; John Jacob Smith; John Bostwick Spalding; Otis B Spalding; Henry Augustus Stephenson; William E. Stevens; Stanley Stillman; John Philip Strickler; Harrison W. Stuckey; Robert Porch Sturr.

Pleasant Addition Taylor; Wallace Irving Terry; Philip M. Thomas; Wm. Benbow Thompson; Tilton Edwin Tillman; George Perkins Tolman; Frank Pixley Topping; Carles Lee Tranter; Ronald B. Tupper.

Benjamin H. Vian; Gabriel J. J. Vischi; Albert B. Vogel; Henry Lewis Wagner; Calvin Albert Walker; Julian L. Waller; William Wallace Washburn; Alanson Weeks; Emmett LeRoy Wemple Jr.; Jas L. Whitney; Glover B. Wilcox; Harry D. Williams; Robert B. Williams; Walter H. Winterberg; Julien M. Wolfsohn; John Homer Woolsey; Harold Walgrove Wright; Harold Zimmerman; Elmo Russell Zumwalt.

SAN FRANCISCO—Mervyn Heller Hirschfeld; Ray Wright Rosson; Harry Travis Summersgill; James A. Young.

SAN LEANDRO—William H. Leahy.

San Joaquin County

SAN JOAQUIN—Lester E. Tretheway. STOCKTON—Ambrose Earl Edgerton; William Friedberger; *L. J. Schermerhorn; Hudson Smythe*; Norman E. Williamson. TRACY—Sydney Ernest D. Pinniger.

San Luis Obispo County

PASO ROBLES—Alvin Hillis Wilmar. SAN LUIS OBISPO—Roy Milo Cox; Byron Young Miller; Paul Kinsley Jackson.

San Mateo County

BURLINGAME—Herbert Seth Anderton; Henry Stevens Kiersted. SAN MATEO—Wood Carson Baker; Walter C. Chidester; Albert Cohen.

Santa Barbara County

GUADALUPE—John Henry Franklin. SANTA BARBARA—Rexwald Brown; Philip S. Chancellor; Gilbert Van Tassell Hamilton; Charles Lynn Morris; Harold Sidebotham; Alexander C. Soper.

SANTA MARIA—Lambert B. Coblentz.

Santa Clara County

AGNEW—Glenn E. Myers. LOS ALTOS—Wladimir Feodor De Niedman. LOS GATOS—George Moulthrop Hubbell. MAYFIELD—Franklin Monroe Seibert.

PALO ALTO—Herlwyn Ruggles Green; Henry Power; Harry Badger Reynolds; Benjamin Thomas.

SAN JOSE—Thomas Loftin Blanchard; Charles Benjamin Hare; Henry D. Hubbard; Frank H. Paterson; Charles Maynard Richard; Lester Charles Scully. SARATOGA—George Waldo Burgess. STANFORD UNIVERSITY—Jaime de Angulo; William Freeman Snow; Herbert Rowell Stolz. SUNNYVALE—George Peter Hall.

Santa Cruz County

DAVENPORT—Bartholomew Gattuccio. SANTA CRUZ—Ben Howard Bush; William Joseph Hosford; Charles Hadden Parker; Alfred Liles Phillips.

Shasta County

REDDING—Ernest Dozier.

Sierra County

ALLEGHANY—John Gustav Norman.

Siskiyou County

MONTAGUE—Charles Plus.

Solano County

BENICIA—Francis Marion Wall. DIXON—Otto Philip Floreth; Henry E. Morrison. VACAVILLE—Humphrey P. Palmer. VALLEJO—Edward August Peterson.

Sonoma County

ELDRIDGE—Fred Otis Butler. PETALUMA—James Garfield Anderson; John Thomas O'Brien; Stuart Zeno Peoples. SANTA ROSA—Jackson Temple. SEBASTOPOL—Lafayette J. Wilson.

Stanislaus County

MODESTO—Robert W. Brace. OAKDALE—Bert Lee Doane; Cecil Ephraim Smith; J. Audley Young.

Tehama County

CORNING—Alonzo Des Moines Snyder.

RED BLUFF—Frank L. Doane.

Trinity County

TRINITY CENTER—Wm. Arthur Rowell.

WEAVERVILLE—David Blackstone Fields; Llewellyn George Petch.

Tulare County

EXETER—Alexander David McLean; Pernier Albert Mix. LINDSAY—Gordon Adams Clapp; Herbert Ronald D. Shoemaker. PORTERVILLE—*Harry Josiah Willey. WOODLAND—Fred Ross Fairchild.*

Tuolumne County

SONORA—George Chauncey Wrigley.

Ventura County

OJAI—Jerome Tewksbury Gardner. OXNARD—Ralph Washburn Avery; Frank Joseph Tillman. SANTA PAULA—Gavin Shearer Herbert; Benjamin Eugene Merrill. VENTURA—Ralph W. Homer; William Joseph Lewis.

Yolo County

DAVIS—Charles Edward Schoff.

Yuba County

CAMPTONVILLE—Frederick King Lord. MARYSVILLE—Everett Edwin Gray; Fred Boyd Tapley.

COLORADO STATE MEDICAL SOCIETY

Officers 1917-18

Edward Jackson, President ....Denver
Peter Hanford, First Vice President ....Colorado Springs
J. H. Bush, Second Vice President ....Sterling
B. B. Blotz, Third Vice President ....Rocky Ford
Chas. Trueblood, Fourth Vice President ....Monte Vista

Councilor Districts and Officers

First District.—Boulder, Larimer, Grand, Weld, Logan, Sedgwick, Phillips, Morgan, Washington and Yuma Counties. J. A. Matlock, Longmont, and M. R. Fok, Sterling, Councilors.

Second District.—Gilpin, Clear Creek, Jefferson, Denver, Arapahoe, Adams [illegible] Counties. Horace G. Wetherell, Denver, and J. W. [illegible]ncilors.

Thir[illegible]eller, Fremont, El Paso, Lincoln, Kit Carson, Cheye[illegible] Pueblo, Otero, Kiowa, Bent, Prowers, Huerfano, [illegible] Counties. W. H. Swan, Colorado Springs, and E. A. Elder, Denver, Councilors.

Fourth District.—Delta, Mesa, Lake, Ouray, Montrose, Chaffee, Rio [illegible] Garfield, Eagle, Rio Blanca and Routt Counties. H. S. [illegible]unction, and Samuel French, Meeker, Councilors.

[illegible]nnison, Pitkin, Saguache, Costilla, Conejos, Mineral, [illegible] San Juan, La Plata, Montezuma, Dolores and San Miguel Counties. A. R. Pollock, Monte Vista, and Edgar Hadley, Montrose, Councilors.

COLORADO

County	Area, Square Miles	Sp. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Wo-Physicians	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Adams	1,262	105.2	11,905	992	12	1	3	7	1	1
Alamosa	800	72.7	6,340	576	11	..	6	10	5	2
Arapahoe	842	64.8	13,740	1,056	13	1	8	9	..	1
Archuleta	1,220	406.7	4,167	1,389	3	1	1	2	1	..
Baca	2,552	638.0	3,799	949	4	1	..	..	1	..
Bent	1,526	1526.0	6,499	6,499	1	..	9	..	..	..
Boulder	764	10.9	36,742	524	70	..	35	44	45	6
Chaffee	1,083	57.0	8,012	421	19	1	11	17	6	6
Cheyenne	1,777	592.3	6,012	2,004	3	1	1	2	..	..
Clear Creek	390	55.7	5.001	714	7	..	1	6	1	1
Conejos	1,393	174.1	7,835	979	8	..	4	8	3	1
Costilla	1,771	295.2	5,056	842	6	..	2	5	2	1
Crowley	1,400	155.5	5,501	611	9	1	2	4	4	2
Custer	747	373.5	1,947	973	2	..	1	2	2	..
Delta	1,201	42.9	19,673	702	28	..	12	21	14	7
[1]Denver	58	0.08	268,439	393	682	59	271	436	325	74
Dolores	1,043	521.5	642	321	2	..	..	..	..	..
Douglas	845	211.5	3,243	810	4	..	1	3	1	..
Eagle	1,620	270.0	2,985	497	6	..	4	4	2	..
Elbert	1,857	371.4	6,958	1,177	5	..	3	4	3	..
[2]El Paso	2,121	15.9	51,874	390	133	5	63	96	87	18
Fremont	1,557	70.8	20,039	910	22	..	6	18	18	2
Garfield	3,107	172.6	13,287	738	18	..	6	14	10	2
Gilpin	132	44.0	4,131	1,043	3	..	2	3	..	1
Grand	1,866	373.2	2,679	535	5	1	3	3	2	1
Gunnison	3,179	264.9	6,309	525	12	..	4	5	3	1
Hinsdale	971	971.0	646	646	1	..	..	1	..	..
Huerfano	1,500	88.2	16,914	996	17	..	10	15	10	2
Jackson	1,632	544.0	1,410	470	3	..	1	1	..	1
Jefferson	838	52.4	17,825	1,114	16	2	10	9	3	2
Kiowa	1,798	1798.0	4,502	4,502	1	1	1	..	..	..
Kit Carson	2,159	196.3	11,791	1,071	11	..	4	7	4	..
Lake	371	45.7	10,600	1,177	9	..	2	4	9	1
La Plata	1,851	132.2	13,581	970	14	..	5	12	1	1
Larimer	2,629	67.4	35,174	901	39	2	16	26	30	2
Las Animas	4,809	104.3	42,257	918	46	..	21	37	26	5
Lincoln	2,570	285.5	9,558	1,062	9	..	3	8	2	1
Logan	1,822	113.9	14,115	882	16	..	9	12	10	..
Mesa	3,163	93.0	31,633	930	34	1	13	21	20	5
Mineral	866	866.0	1,239	1,239	1	..	..	..	1	..
Moffat	3,834	766.8	2,458	491	5	..	3	4	..	1
Montezuma	2,031	410.2	6,467	1,093	5	..	4	4	..	..
Montrose	2,264	141.5	14,491	905	16	3	9	12	9	1
Morgan	1,286	71.4	14,182	787	18	..	9	15	9	2
Otero	2,067	62.6	21,035	637	33	1	13	21	16	1
Ouray	519	74.1	3,514	502	7	..	3	5	..	1
Park	2,212	737.3	2,492	830	3	..	1	2	1	2
Phillips	688	106.3	4,343	723	6	..	4	5	2	..
Pitkin	1,019	203.8	4,566	913	5	..	2	4	..	..
Prowers	1,630	81.5	13,719	685	20	1	9	13	16	3
Pueblo	2,433	26.7	65,198	716	91	4	43	64	61	11
Rio Blanco	3,223	805.7	3,801	950	4	..	3	4	2	1
Rio Grande	898	74.8	8,373	697	12	..	4	8	9	2
Routt	6,967	409.8	7,949	467	17	..	7	12	4	4
Saguache	3,133	284.8	4,383	398	11	1	4	9	6	..
San Juan	453	75.5	3,589	596	6	..	4	5	4	..
San Miguel	1,288	143.1	4,700	522	9	1	3	8	2	1
Sedgwick	531	106.2	4,586	917	5	..	3	4	2	..
Summit	649	216.3	2,003	667	3	..	2	2	2	..
Teller	547	36.5	14,351	956	15	..	8	14	9	2
Washington	2,521	315.1	8,036	1,004	8	1	1	7	2	..
Weld	4,022	55.1	55,504	760	73	3	37	51	31	6
Yuma	2,367	197.2	11,378	948	12	..	9	15	2	..
Totals	119,785	70.9	1,014,178	750	1,689	99	739	1,164	841	185

[1] Includes Denver, population 253,161; physicians 682 [M.R.C 74].

[2] Includes Colorado Springs, population 32,344; physicians 115 [M.R.C. 18].

HONOR ROLL

Adams County

HENDERSON—Albert West Metcalf Jr.

Alamosa County

ALAMOSA—Charles L. Orr; John Dewi Davies.

Arapahoe County

ENGLEWOOD—Hubert Grieger.

Boulder County

[illegible] Ashley; William A. Jolley; Joseph Brenald Sa[illegible] Byrd McFarland; Vivian Russell Pennock; Willard Justin [illegible]

Chaffee County

BUENA VISTA—Victor B. Ayers; Angus MacLennan. SALIDA—Charles Carleton Orr Booth; Frank Nicholas Cochems; C. Rex Fuller; Charles Stephen Phalen.

Clear Creek County

SILVER PLUME—William Elizabeth Drisdale.

Conejos County

ANTONITO—Archibald Joseph Chisholm.

Costilla County

BLANCA—Walter Wallace Covell.

Crowley County

ORDWAY—*James Edgar Jeffrey.* SUGAR CITY—Chas. H. Waxham.

Delta County

CEDAREDGE—Louis Clifton Bolton. CRAWFORD—Oscar Allen Duncan; Winfield Scott Cleland. DELTA—Earlscourt Grant Shaffer. HOTCHKISS—W. Claude Copeland; Walter Haines Lewis. PAONIA—Augustus Frederick Erich.

Denver County

DENVER—Kenneth Dayton Allison Allen; John W. Amesse; James Rae *Arneill; William M. Bane; Amos Llewellyn Beaghler.*

Alpha J. Campbell; Benjamin William Carlson; Fred H. Carpenter; Augustine Santini Cecchini; Phillips Maurice Chase.

Edward Francis Dean; Albert Warner Dewey; Ray Lawrence Drinkwater.

William A. Epstein; Harold Emerson Farnsworth; Harry Silsby Finney; *Wm. Chris Finnoff; Wm. Donaldson Fleming; Harmon Lonzo Fowler.*

Harold Gould Garwood; John Crittenden Gorsuch; William West Grant; Josiah Newhall Hall; John Claudius Herrick; Joseph Robinson Hood; *Thomas Mayes Hopkins; Walter Kendrick Hotchkiss; Louis Hough;* Ranulph Hudston.

Clarence B. Ingram Jr.; Walter Addison Jayne; Samuel Fosdick Jones.

Claude C. Keeler; Julien C. Kennedy; Wallace Caw Kent; Robert Levy; Lawrence Kirby Lunt; George Bennett Lewis; William Benjamin Lewis; C[illegible] Thomas F. Long; Oliver Lyons.

Harold [illegible] Arthur Jackson Markley; Eugene Mattice; Arthur [illegible] Hector McNaught; Charles Walter Metz; Charles [illegible] James Offerman; George E. Orsborn.

Robert G. Packard; Joseph William Pecony; Cyrus Long Pershing; *Cuthbert Powell; Charles Andres Powers; Miller E. Preston.*

William Roberts; Reuben Schachet; William Alexander Sedwick; Harry Summers Shafer; Arthur William Stahl; Joseph Manning Steiner; Elbert Byron Swerdfeger.

Robert E. Talbot; Alexander Bismarck Terrell.

Dell W. Van Gilder; Lewis Marshall Van Meter; Orville D. Westcott; Horace G. Wetherill; William Whitridge Williams; Nicholas Anderson Wood; Robert Lupinski Zaegel.

El Paso County

COLORADO SPRINGS—*Lloyd Raymond Allen; George William Bancroft;* James Horace Brown; Louis Gordon Brown; Burnett "A" Filmer; Alexius Mador Forster; *Omer Rand Gillett; Henry Williamson Hoagland;* Tom Ray Knowles; Philip Albert Loomis; Alexander Covington Magruder; Edgar Marcella Marbourg; Lewis Hugh McKinnie; George Laird Sharp; Charles F. Stough; *Will Howard Swan; Gerald Bertram Webb.*

COLORADO SPRINGS—Frank Lowndes Dennis.

Fremont County

CAÑON CITY—Hart Goodloe. FLORENCE—Amon Vardry Hutton.

Garfield County

GLENWOOD SPRINGS—William W. Frank. GRAND VALLEY—Fred Henry Miller.

Gilpin County

BLACKHAWK—Clarence Mauritz Ford.

Grand County

KREMMLING—Justin John Young.

Gunnison County

SOMERSET—James Richard Earle.

Huerfano County

IDEAL—Jesse DeClifford Wilson. STRONG—Aubert Durnell.

Jackson County

WALDEN—Charles H. Fischer.

Jefferson County

GOLDEN—John Frederick Howard; Earl Wallace Kemble.

Lake County

LEADVILLE—Franklin Joseph McDonald.

La Platte County

DURANGO—Aleck Franklin Hutchinson.

Larimer County

FORT COLLINS—Curtis A. Atkinson; Albert Whipple Rew.

Las Animas County

SEGUNDO—Ortus Fuller Adams. SOPRIS—Arthur Ernst Gill. TRINIDAD—John R. Espey; Caleb W. Presnall; Edward John Scannell.

Lincoln County

HUGO—Charles Lieber.

Mesa County

GRAND JUNCTION—*Charles Wesley Reed; James Melville Shields;* Frank Noble Stiles; Arthur George Taylor. PLATEAU CITY—William Victor Watson.

Moffat County

CRAIG—Morrow Duncan Brown.

Montrose County

OLATHE—Charles Edwin Lockwood

Morgan County

FORT MORGAN—Robert Craig Bowie; Elwyn R. Clarke.

Otero County

LA JUNTA—Harvey Ellsworth Hall.

Ouray County

OURAY—Lawrence Clark Cook.

Park County

FAIR PLAY—Frank Dunkle.

Prowers County

HOLLY—Milton Augustus Broemser. LAMAR—Clyde Thomas Knuckey; Lanning Elbridge Likes.

Pueblo County

PUEBLO—Eldridge S. Adams; Leon Block; Eugene Harold Brown; Harold T. Low; Joseph Francis Snedec; Thomas H. Stoddard; Charles Walker Streamer; John William Thompson; Philip Work.
PUEBLO—William Henry Halley; Hubert Work.

Rio Grande County

DEL NORTE—Arthur Blaine Gjellum; Harry C. Miller.

Rio Blanco County

MEEKER—Harry Bismarck Sobernheimer.

Routt County

OAK CREEK—Forest Charles Kracaw. STEAMBOAT SPRINGS—Frank Jay Blackmer; Horace C. Dodge; William Kernaghan.

San Miguel County

PLACERVILLE—James Willboarn Sylvester Cross.

Teller County

VICTOR—Harry George Thomas; Charles Edward Elliott.

Weld County

GREELEY—Oscar Francis Broman; Walter Fremont Church; Edwin Winslow Knowles. JOHNSTOWN—Orien Ashbury Grantham. MILLIKEN—Carl Campbell Fuson. STONEHAM—Floyd Clinton Turner.

CONNECTICUT STATE MEDICAL SOCIETY

Officers 1917-18

Charles J. Bartlett, President........................New Haven
Chas. B. Graves, Vice President........................New London
Cushman A. Sears, Vice President........................Portland
J. E. Lane, Secretary........................New Haven
Joseph H. Townsend, Treasurer........................New Haven

Councilors

Wm. H. Garmalt, New Haven; Walter R. Steiner, Hartford; Patrick J. Cassidy, Norwich; Frank W. Stevens, Bridgeport; Seldom B. Overlock, Pomfret; Elias Pratt, Torrington; Geo. N. Lawson, Middle Haddam; Thomas F. Rockwell, Rockville.

CONNECTICUT

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
[1]Fairfield........	631	1.6	314,000	844	372	10	272	333	229	51
[2]Hartford.......	729	1.7	307,000	717	428	14	320	326	251	72
Litchfield.......	925	10.3	75,069	843	89	1	40	62	51	12
Middlesex.......	369	4.9	48,467	646	75	6	33	59	53	10
[3]New Haven.....	403	1.1	411,000	817	503	16	200	391	355	87
New London....	659	5.0	102,000	778	131	12	55	81	66	13
Tolland.........	404	1.4	27,872	995	28	..	11	18	17	4
Windham.......	500	9.4	49,456	933	53	4	17	29	33	0
Totals........	4,820	2.8	1,334,864	795	1,679	63	948	1,299	1,055	261

1. Includes Bridgeport, population 48,434; physicians 169 [M.R.C. 29].
2. Includes Hartford, population 108,969; physicians 265 [M.R.C. 50].
3. Includes New Haven, population 147,095; physicians 266 [M.R.C. 45], and Waterbury, population 84,745; physicians 93 [M.R.C. 19].

HONOR ROLL

Fairfield County

BETHEL—Homer Franklin Moore.

BRIDGEPORT—Frederic J. Adams; Charles Lincoln Banks; Lewis George Beardsley; Abraham Bernstein; Fessenden Lorenzo Day; Edward Nicholas DeWitt; Henry Campbell Dixon; George B. Garlick; Owen James Groark; Charles Pickhardt Haller; George Waller Hawley; Henry B. Lambert; Daniel H. Lawler; Charles Joseph Leverty; John Gabriel O'Connell; Ewald Edward Olsson; Daniel Cleveland Patterson; Laurence E. Poole; John T. H. Powers; Robert Douglas Roller Jr.; Douglas James Roberts; Charles H. Sprague; Edw[illegible] ank W. Stevens; Clifton Clark Taylor. [illegible] Brown; Richard M. English; Howard D. Mo[illegible]

FAIRFIELD—William Thomas Nag[illegible] Champion Deming. GREENWICH—Thomas Joseph Bergin; Fritz Carleton Hyde. NEW CANAAN—Fenwick Beekman; Edwin Saxton Bennett; Edmond J. O'Shaughnessy; Ralph Lewis White. NOROTON HEIGHTS—Harold Eliphalet Hoyt. NORWALK—George E. Cram; Frederick James Morrison; George M. Muren. SHELTON—Charles Seavers Smith. SOUTH NORWALK—Robert Earnest Perdue. SPRINGDALE—Frederick Eugene Stockton. STAMFORD—Halgasoon Kruger Kaprielian; Daniel P. Platt; Edward Everett Rowell Jr.; William Earl Smith. WESTPORT—Frank Harold McLaury.

BRIDGEPORT—Marcus Carl Beck; Benjamin Brooks Finkelstone; John Stanley Nickum; Bartholomew Charles Pasuth.

Hartford County

BRISTOL—Ralph Augustus Richardson; Edward Barker Sanborn; Joseph I. Woisard. EAST HARTFORD—Edward Hamilton Truex. GRANBY—Vincent Joseph Irwin Jr.

HARTFORD—Harold A. Bancroft; Julian Lee Birdsong; Richard Blackmore; Anthony W. Branon; Philip Dibble Bunce; Freeman Pell Clason; Max Climan; Ansel Granville Cook; William Patrick Daly; William Dwyer; William J. Fay; William Henry Flynn; Arthur Sheldon Grant; John Bagg Griggs; Abraham Benjamin Gross; Walter Fairbank Hume; Herman Max Hurwitz; James Eldor Hutchison; Raymond Francis Kircher; Arthur Bernard Landry; Franklin Lyman Lawton; Edward McDermott; James Patrick McManus; James Raglan Miller; William Thomas Owens; John William Parker Jr.; Ulric Plante; William Francis Reardon. Frank Joseph Ronayne; Alfred Merriman Rowley; John Carter Rowley; John Francis Sagarino; Harry Arthur Seigall; Robert Syhoff Starr; Ivan Reed Stidger; Wm. Myron Stockwell; Henry Farnum Stoll; Eugene Joseph Therrien; Harold Thomas; Paul Waterman; Stanley Burnham Weld; Donald Breckinridge Wells; Edward Joseph Whalen; Otto George Wiedman; Frank Emery Wilson; James Cornelius Wilson; Robert M. Yergason. KENSINGTON—Matthew Hammond Griswold. MANCHESTER—Joseph Ambrose Higgins; LeVerne Holmes. NEW BRITAIN—George Henry Dalton; James Francis Faulkner; Raymond W. Lewis; Waterman Lyon. PLAINVILLE—Lawrence Hubbard Frost. SOUTHINGTON—William Radley Miller. SOUTH MANCHESTER—Edward Bartlett Allen; Clarence Charles Burlingame. SUFFIELD—Russell Barber Street.

HARTFORD—James Francis Rooney; Theodore Leroy Story; Hartwell Greene Thompson.

NEW HAVEN—William Patrick Burke; Carl Wm. Henze; Bernard Francis Gilchriest, Bernard C. Marantz.

WEST HAVEN—Wm. Michael O'Connell.

Litchfield County

CANAAN—John Geikie Adam. COLEBROOK—Gilbert Horrax. LITCHFIELD—Nelson Lloyd Deming; John Esten Kellar Jr.; Charles Henry Turkington. MARBLEDALE—Marmaduke Hamilton Denslow. TERRYVILLE—Richard John Lawton; Harold Burton Woodward. TORRINGTON—Wallace Ellsworth Hoffman; Herbert Charles Oelschlegel. WEST CORNWALL—Robert James Grand-Lienard.

ROMFORD—Samuel Clark Harvey.

Middlesex County

CLINTON—Graham Ormond Wellman. ESSEX—Frederick Barton Bradeen. HIGGANUM—Leonard Joseph Loewe. MIDDLETOWN—Arthur Burr Coleburn; Carl C Harvey; Ernest Harold King; Daniel Andrew Nolan; Francis Joseph O'Brien; John Ignatius Wiseman. PORTLAND—Charles Brigham Chedel.

New Haven County

ANSONIA—Fred Francis Armstrong; Cornelius Stephen Conklin; James Frank McNish. BRANFORD—Charles William Gaylord. DERBY Herbert Alfred Roberts; Elmer Thomas Sharpe; Michael J. Sheahan. HAMDEN—Walter Sidders Lay. MERIDEN—John B. Healey; Thomas Patrick Murdock; Raymond Vincent Quinlan; Thaddeus Stamslaus Skladzien; David Parker Smith; Louis Frederick Wheatley. MIDDLETOWN—Harold Lester Burr. MILFORD—Carlton Kellog Heady. NAUGATUCK—David C. Bull; Michael Francis Claffey; Arthur B. Dayton.

NEW HAVEN—Harold S. Arnold; William S. Barnes; Eugene M. Blake; Samuel Henry Braude; Karl Benjamin Bretzfelder; John W. Churchman; James F. Cobey; William Francis Collins; Charles W. Comfort Jr.; Fred Walter Comstock; Harry Albert Conte; Herman Porter Davidson; Robert Lee Elliston; John Marshall Flint; James A. Gettings; James Cowan Greenway; James Aloysius Harten; Joseph Alton Holgen Jr.; James Albert Honeij; John G. Hugo; Frederic Henry Hynes; Simon Bretzfelder Kleiner; Arthur J. Logie; Lloyd Leslie Maurer; William Chas. McGuire; William H. Morris; John A. Murphy; Abraham Lewis Olshansky; Donald Wallace Porter; Alexander Louis Prince; John Recca; Orville Forrest Rogers Jr.; Thomas H. Russell; Robert F. Scholl; William Lawrence Sheahan; Jeremiah Barrett Sullivan; Raynham Townsend; Alexander C. Thompson; Rex Edward Van Duzen; William Francis Verdi; Arthur Weed; Arthur Isadore Weil; Herman Robert White; Milton Charles Winternitz.

NORTH HAVEN—Gould Shelton Higgins.

WALLINGFORD—James D. McGaughey; Mark Thomas Sheehan; Wallace Nathaniel Sweet.

WATERBURY—Henry G. Anderson; Walter Lewis Barber Jr.; Augustin Averill Crane; John Sinclair Dye; John Edward Farrell; Jacques Henry Green; Thomas F. Healey; Andrew Joseph Jackson; Edward Harry Kirschbaum; George Arthur Leonard; Arthur Francis McDonald; James Lignori Moriarty; Raymond James Quinn; Raymond Harrison Ryder; Egbert Livingston Smith; George Milton Smith; Harry Aaron Solomon; Edmund Spicer; Edwin R. Webber. WATERVILLE—Edward John Godfrey. WEST HAVEN—Ralph D. Clark.

WATERBURY—Sidney Collingwood Dalrymple.

New London County

COLCHESTER—Edward Joseph Howland. GROTON—Edmund Latham Douglass. MYSTIC—William Henry Gray. NEW LONDON—George Philip Cheney; Walter Landon Douglass; Joseph M. Ganey; Harry Mower Lee; Winthrop Essex McGinley; Thomas Soltz. NORWICH—John S. Blackmar; John William Callahan; John Daniel Donovan; William Thomas Driscoll.

Tolland County

ELLINGTON—Edward Alfred Brace. MANSFIELD CENTRE—William Edward Cramm. MANSFIELD DEPOT—John Francis Hackett. ROCKVILLE—Elliott Harrison Metcalf.

Windham County

DANIELSON—Frank Paige Todd. POMFRET CENTER—Frederick Grosvenor Goodridge. PUTNAM—Edward Franklin Perry. WILLIMANTIC—Charles Albert Jenkins: William P. S. Keating; Louis Irving Mason; Owen O'Neill; Fred Morse Smith.

DANIELSON—James Robertson Knowles.

DELAWARE STATE MEDICAL SOCIETY

Officers 1917-18

Geo. W. K. Forrest, President........................Wilmington
R. G. Paynter, First Vice President........................Georgetown
James Martin, Second Vice President........................Milford
William A. LaMotte, Secretary........................Wilmington
Samuel Rumford, Treasurer ....Wilmington

Councilors

Newcastle County, Peter W. Tomlinson, Wilmington; Sussex County, James Beebe, Lewes.

HONOR ROLL

Kent County

DOVER—William Clements Behen; George I. McKelway. HARRINGTON—Joseph Bringhurst.

New Castle County

CENTERVILLE—John W. Crossan. DELAWARE CITY—Walter Winthrop Ellis. NEW CASTLE—Robert Ray Roth.

WILMINGTON—Joseph M. Barsky; Bruce Henry Beeler; Ira Burns; Edward Thomas Crossman; James A. Draper; Abram Joseph Gross; Mark

B. Holzman; Bernard Allen Jenkin; Edwin Harvey Lendernan; Bernard Joseph McEntee; Herman Simmons Miller; John Henry Mullen; John Burton Rutherford; Meredith I. Samuel; James Guie Spackman; William Henry Speer; Victor Duke Washburn.

NEWARK—John H. W. Ayers.

DELAWARE

County	Area, Spuare Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Kent	617	16.2	32,721	861	38	..	13	21	12	3
[1]New Castle	435	2.8	152,666	998	153	5	81	109	69	22
Sussex	913	14.5	49,432	784	63	..	26	42	22	7
Totals	1,965	7.7	234,819	924	254	5	120	172	103	32

1. Includes Wilmington, population 93,161; physicians 126 [M.R.C. 18].

Sussex County

BACONS—Walter A. Bacon. DELAWARE BREAKWATER—George G. Hart. LAUREL—John R. Elliott. LEWES—Richard Clarence Beebe. MILFORD—William Marshall Jr.; Willard Richardson Pierce. SEAFORD—Harrison Martin Manning.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA

Officers 1917-18

G. Wythe Cook, President.............................Washington
C. M. Beall, First Vice President.............................Washington
M. H. Prosperi, Second Vice President.............................Washington
H. C. Macatee, Recording Secretary.............................Washington
J. Lawn Thompson, Corresponding Secretary.............................Washington
Chas. W. Frazoni, Treasurer ....Washington

Councilors

J. B. Nichols, Washington; L. H. Reichelderfer, Washington; E. G. Seibert, Washington; J. L. Thompson, Washington; John Van Rensselaer, Washington; Jos. S. Wall, Washington; Wm. P. Carr, Washington; J. W. Chappell, Washington; Francis R. Hagner, Washington.

DISTRICT OF COLUMBIA

County	Area, Spuare Miles	Sp. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Washington	60	0.05	369,282	300	1,230	64	817	951	641	216

HONOR ROLL

WASHINGTON—Roy Delaplaine Adams; Samuel S. Adams; Samuel
Allen Alexander; James Henry Allen; Charles L. G. Anderson; Horace
Edward Auringer.
Howard Wilson Barker; Wilfred M. Barton; Charles Bell; Leonard P.
Bell; Victor E. Beliinger; Carroll Edward Bingman; Frank Lee Biscoe;
Harry Aloysius Bishop; Rudolph H. Bloom; Boyce Richardson Bolton;
Daniel LeRoy Borden; John Wesley Bovee; John Chester Brady; Scott
Dudley Breckinridge; Joseph Hammond Bryan; Herbert J. Bryson;
William R. Buchanan; John Woolfolk Burke; James Augustine Cahill Jr.
J. E. Campbell; Claude Carlisle Caylor; Francis M. Chisholm; Arthur
George Compton; Richard Lloyd Cook; Samuel LeCount Cook; Wellington
Watson Cooper; Sidney Charles Cousins; Clyde B. Covey; Oliver
Clemence Cox; Samuel Clifford Cox; Charles Brown Crawford; Lemon
Dow Cruice; Arthur Leo Curtis; Austin Maurice Curtis Jr.
Moses H. Darnall; Ralph Harold Davis; William Thornwall Davis; John
Henry Digges; John Dunlop; Hubert Fairleigh Dunn; Joseph Francis
Dyer.
Lewis Charles Ecker; Leonard Harrison English; William Gage Erving;
Nathan Sherwood Ferris.
Melville Bendheim Fischer; Thomas M. Foley; Carroll H. Francis;
Walter A. Frankland; Homer G. Fuller.
Fielding H. Garrison; Augustus Clagett Gray; Eric Steel Green;
Charles I. Griffith; C. C. Groff.
Carlton Daniels Haas; Arthur Joseph Hall; Custis Lee Hall; Thomas
V. Hammond; Norman Watkin Harris; James W. Hart; Henry Hayes;
Joseph M. Heller; Samuel Carl Henning; Daniel Lee High; Edwin Richard
Hodge; Abram B. Hooe; James Spencer Hough; William James Howard
Jr.; Jarrett Matthew Huddleston; William B. Hudson; Howard Hume;
William Henry Huntington; Charles W. Hyde.
Paul Bowen Alden Johnson; Stuart C. Johnson; Edward Barton Jones;
Thomas Edward Jones.
Howard F. Kane; Jos. J. Kaveney; Adam Kemble; James Philip Kerby;
Harry Hyland Kerr; James Joseph Kilroy; Harry Clifton King; Millard
Knowlton.
Willard Mercer Lane; Christopher Columbus Lathers; Edwin Henry
Lee; Kenneth D. Legge; Julius C. LeHardy; Louis Charles Lehr; Richard
M. Little; William Houston Littleplace; Charles R. Luce; Marcus Ward
Lyon Jr.
Henry C. Macatee; Andrew M. MacDonald; John Joseph Madigan;
William J. Manning; Charles C. Marbury; William Berry Marbury;
William G. Marks; Eli Kennerly Marshall Jr.; Ulysses Grant Baldwin
Martin; Charles Edward Maxwell; Charles Francis McGuire; James
George McKay; Arthur Bandcroft Mckinney; William Frank McLaughlin;
Joseph Aaron Mendelson; William Campbell Miller; James Fernandis
Mitchell; Albert John Molzalin; Thomas Verner Moore; William Gabell
Moore; John Francis Moran; Francis Patterson Morgan; James D.
Morgan; William G. Morgan; Roy Thomas Morris; Samuel Nelson Mos-
kowitz; Joseph Mundell; John L. Norris; William Harrison Norton; William
Lester Neuman; John Garrett O'Neil.
Francis O'Donnell; Dillon Edward Mason Parker; Henry Pickering Par-
Albert Elwood Pagan; Edward Patton; Franklin Burche Pedrick; Ivy Albert
ker; William Francis Patton; Orlando J. Posey; Dana C. Post; Daniel
Pelzman; John Burr Piggott; [illegible] Price; Paul Stirling Putzki.
Webster Prentiss; Harry Marti[illegible]

Charles Edward Ralph; Buchner Magill Randolph; Luther H. Reichelderfer; Fritz August Reuter; Eugene Clarence Rice Jr.; Charles W. Richardson; James J. Richardson; Charles D. Riker; Albert Ridgeley; Charles Sumner Robbins; Arthur Felis Roche; Louis Charles Rosenberg; Frank K. Ryan.

Guy Stark Saffold; David Gentner Sampson; Henry F. Sawtelle; George Joseph Schirch; Harry L. Schurmeier; Edward Grant Seibert; John Hunter Selby; Lucien Conway Smith; Merrill C. Sosman; Joseph D. Stout; John B. Spencer; Robert Young Sullivan.

John Allen Talbott; David W. Tastet; John Daniel Thomas; Edgar Dorman Thompson; Albert Perkins Tibbetts; Joel Adams Tilton; Henry Wood Tobias; Grafton Dent Townshend.

John Van Rensselaer; Walter Van Sweringen; George Tully Vaughan; Jose Rosado Villamil; Lewis Albert Walker; Byron Alexander Watson; Clarence F. Weaver; Walter Augustine Wells; Albert Wenzell; William Olendorf Wetmore; Charles Wheatley; Leroy M. White; William H. Whitmore; Elmore Cornelius Wiggins; Virgil Blackstone Williams; Prentiss Wilson; William H. Wilmer.

Harry C. Yarrow; Joseph W. Zigmand; Arthur Morris Zinkhan; Paul Hudson Zinkhan.

WASHINGTON—Dorrell Ghio Dickerson; Edwin M. Hasbrouck; Joseph James Kinyoun; James Burnett Laughlin; Frederick Michael Nolan; Geo. Samuel Reiss.

FLORIDA MEDICAL ASSOCIATION

Officers 1917-18

Fred J. Walter, President.............................Daytona
H. C. Dozier, First Vice President.............................Ocala
D. A. McKinnon, Second Vice President.............................Marianna
Henry Hanson, Third Vice President.............................Jacksonville
Graham E. Henson, Secretary.............................Jacksonville

Councilor Districts and Officers

First District.—Santa Rosa, Escambia, Walton counties. J. Harris Pierpont, Councilor, Pensacola.

Second District.—Liberty, Franklin, Gadden, Jefferson, Wakulla and Leon counties. F. F. Ferris, Councilor, Apalachicola.

Third District.—Columbia, Taylor, Lafayette, Hamilton, Madison and Suwanee counties. Councilor, W. C. White, Live Oak.

Fourth District.—Duval, St. Johns, Clay and Nassau counties. Gerry R. Holden, Councilor, Jacksonville.

Fifth District.—Lake, Sumter, Citrus, Hernando and Marion counties. E Van Hood, Councilor, Ocala.

Sixth District.—Pascoe, Hillsborough and Pinellas counties. Thos. Truelsen, Councilor, Tampa.

Seventh District.—Brevard, Volusia, Orange, Osceola and St. Lucie counties. Davis Forster, Councilor, Hawks Park.

Eighth District.—Levy, Alachua, Bradford, Baker and Putnam counties. A. H. Freeman, Councilor, Starke.

Ninth District.—Bay, Calhoun, Holmes, Jackson and Washington counties. J. S. McGeachy, Councilor, Chipley.

Tenth District.—De Soto, Lee, Manatee and Polk counties. R. L. Cline, Councilor, Arcadia.

Eleventh District.—Dade, Monroe and Palm Beach counties. W. R. Warren, Councilor, Key West.

HONOR ROLL

Alachua County

CAMPVILLE—George Washington Sherous. GAINESVILLE—William J. Buck; Allen Graham; William H. Pickett; George Clarence Tillman. MELROSE—Johnson Nichols McCartney. MICANOPY—Orion U. Feaster; Edgar Barsillai Howell.

Bay County

FOUNTAIN—James Lee Pennington. MILLVILLE—James Montgomery Nixon. PANAMA CITY—William Davis Cawthorn.

Bradford County

STARKE—Albert Howard Freeman. WORTHINGTON—James Oliver Phillips.

Brevard County

MELBOURNE—Leon Herbert Martin. TITUSVILLE—Bennett Auxford Burks.

Broward County

DANIA—Thomas Edwin Parrish. FT. LAUDERDALE—Robert S. Lowry.

Calhoun County

BLOUNTSTOWN—Gordon Turner Crozier. PORT ST. JOE—Baldwin Shields Stutts.

Citrus County

CRYSTAL RIVER—Joseph Max Irwin.

Columbia County

FORT WHITE—William Eugent Whitlack. LAKE CITY—John P. Long; Dwight Dray Rivers

Dade County

CLEARWATER—John Roy Hawkins. LARKINS—Grover Cleveland Franklin. MIAMI—Wm. Stanley Gramling; Henry Harrison Greene; Eugene Keene Jaudon; Thomas Luther Lowrie.

De Soto County

ARCADIA—Henry P. Bevis. BOWLING [illegible] Lee Crum.
[illegible] Sebastian Coker. [illegible] Cash
[illegible] Archer
[illegible] David Norma[illegible]
[illegible] W. Taylor.

Duval County

JACKSONVILLE—Albert E. Acker; Samuel Aronovitz; Frederick
Greene Barfield; Edward Grant Birge; Herbert O. Black; John Benj.
Black; John Elliott Boyd; Turner Ziegler Cason; Henry Boylston Cordes
Jr.; Theodore Gaillard Croft; Gaston Day; Walter P. Dey; Stanley
Erwin; T. S. Field; Julian Eugene Gammon; Robert Ernest Gilbert;
Drew R. Handley; Henry Hanson; Herman Hirsch Harris; Graham
Edward Henson; Edward Jelks; Charles Leitner Jennings; Charles
L. Kennon; Louis Mixson Limbaugh; James A. Livingston; Robert
Drysdale May; William George McKay; Albert Clarence McKenzie;
George Milner Mitchell; John Kirk Norwood; James Buchanan Parra-
more; Archie Rosco Parrott; James D. Pasco; Claus Alfred Peterson;
Harry Alexander Peyton; Harper Lane Proctor; Shaler Arnold Richard-

FLORIDA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Alachua	1,262	30.7	35,808	873	41	..	24	37	23	8
Baker	587	195.6	5,260	1,753	3	..	2	3	..	..
Bay	1,500	65.2	16,622	722	23	..	12	16	11	3
Bradford	539	31.7	17,810	1,047	17	..	11	15	12	2
Brevard	1,025	51.2	8,250	412	20	..	12	11	9	2
Broward	1,200	133.3	6,026	669	9	..	5	7	2	2
Calhoun	1,192	99.3	9,167	763	12	..	7	10	1	2
Citrus	620	124.0	7,709	1,541	5	..	4	4	2	1
Clay	617	123.4	7,775	1,555	5	..	4	5	1	..
Columbia	792	49.5	18,123	1,132	16	..	10	11	7	3
Dade	2,733	54.6	29,707	594	50	2	20	38	28	6
De Soto	3,754	85.3	25,249	573	44	..	20	36	19	7
[1]Duval	786	4.2	111,089	600	185	3	136	162	91	45
Escambia	657	10.7	45,122	739	61	..	40	52	35	18
[2]Flagler	Note 2				2	..	..	1	..	..
Franklin	541	108.2	5,523	1,104	5	..	5	5	3	1
Gadsden	540	30.0	27,228	1,513	18	..	11	15	8	3
Hamilton	528	58.6	12,736	1,415	9	..	7	7	..	..
Hernando	497	62.1	6,787	848	8	..	4	6	2	..
[3]Hillsborough	1,329	11.7	90,669	802	113	1	69	87	60	20
Holmes	458	57.2	15,068	1,883	8	1	8	7	..	1
Jackson	965	30.1	37,551	1,173	32	..	24	29	19	1
Jefferson	585	53.1	17,951	1,627	11	..	7	9	5	1
Lafayette	1,244	207.3	8,319	1,386	6	..	6	6	..	2
Lake	1,047	32.7	13,601	425	32	2	13	19	11	6
Lee	4,031	268.7	9,670	644	15	1	8	9	2	2
Leon	715	37.6	20,407	1,074	19	..	8	15	8	6
Levy	1,143	103.9	12,633	1,148	11	..	6	9	4	2
Liberty	823	137.1	5,973	995	6	..	3	5	1	2
Madison	719	44.9	18,185	1,136	16	..	7	12	6	3
Manatee	1,337	46.1	18,354	632	29	4	11	18	9	7
Marion	1,647	44.5	29,454	796	37	..	18	28	21	8
Monroe	1,100	84.6	24,159	1,858	13	..	10	11	10	4
Nassau	630	63.0	11,160	1,116	10	..	3	7	..	..
Okaloosa	1,250	113.6	6,352	577	11	1	6	11	2	..
[4]Okeechobee	Note 4				3	1	..	3	2	..
Orange	1,250	34.7	24,752	687	36	1	17	24	15	2
[4]Osceola	1,773	Note 4	13,020	.....	7	2	5	6	4	2
[4]Palm Beach	3,048	Note 4	11,473	.....	24	1	14	18	4	..
Pasco	767	85.2	10,452	1,161	9	..	7	8	3	1
Pinellas	275	4.7	21,089	363	58	3	23	25	29	9
Polk	1,907	30.7	42,518	685	62	1	31	46	25	11
Putnam	752	44.2	17,044	1,002	17	1	7	10	4	..
[2]St. John	966	Note 2	16,158	.....	21	..	11	16	9	3
[4]St. Lucie	1,395	Note 4	10,321	.....	12	1	8	7	4	1
Santa Rosa	1,546	154.6	21,034	2,103	10	..	9	9	7	2
Seminole	310	20.6	10,075	671	15	..	8	12	7	2
Sumter	583	72.8	7,832	979	8	..	6	8	5	2
Suwanee	692	32.9	21,559	1,026	21	..	16	18	11	3
Taylor	1,054	106.4	12,195	1,219	10	..	6	9	..	2
[2]Volusia	1,256	Note 2	23,611	.....	43	1	16	25	18	5
Wakulla	602	200.6	8,682	2,894	3	..	..	1	..	..
Walton	1,382	115.1	12,973	1,081	12	1	8	8	7	..
Washington	1,435	143.5	11,075	1,107	10	1	5	9	2	..
Totals	59.396	46.2	1.031,372	803	1,283	29	738	998	568	213

1. Includes Jacksonville, population 73,137; physicans 175 [M.R.C. 42].
2. Flagler county was recently formed from parts of St. John and Volusia counties. The 3 counties have 1 physician for every 33.7 square miles and for every 602 people.
3. Includes Tampa, population 51,521; physicians 93 [M.R.C. 17].
4. Okeebochee county was recently formed from parts of Osceola, Palm Beach and St. Lucie counties. The 4 counties have 1 physician for every 135.1 square miles and for every 756 people.

son; Carey Pegram Rogers; Wm. Riley Schnauss; Elijah Thomas Sellers; Raymond C. Turck; Howard Crawford Von Dahm; Albert Harrison Wilkinson.

PANAMA CITY—John Marion Whitfield. LAKE CITY—Daniel Benj. Williams.

Escambia County

CENTURY—Neece Lewis Gachet; John Samuel Turberville. MUSCOGEE—Robert Hardy Trammell. PENSACOLA—Allen Monte Ames; James Henry Bickerstaff; Fritz A. Brink; Herbert Lee Bryans; Thomas Jesse Busey; Clinton Willoughby D'Alemberte; Hyman Max Ginsberg; John Whiting Hargis; Frank Petty Hixon; Stephen Russell Mullory Kennedy; Daniel McMillan; Joseph Arnold Mixon; David C. Thompson. PINE BARREN—William Arthur Clark. WALNUT HILL—Herbert Arent McClure.

Franklin County

APALACHICOLA—Frank Fenton Ferris.

Gadsden County

CHATTAHOOCHEE—Ralph N. Greene. QUINCY—Harry Bernard McEuen. REDDICK—Robert Donald Ferguson.

Hillsborough County

FT. DADE—John K. Hereford. PLANT CITY—John Walker Alsobrock; James Wilhite Crum. TAMPA—[illegible] Robert Edgar Baldwin; Andrew Robeson Bond [illegible] ıd F. Carlton; Geo. Bailey Coon; Lester Julian [illegible] Gilmer; John Halliday; Thomas R. Jones; William Jesse Lancaster; Leonard G. Larner; John Donald MacRae; Raymond B. McClaws; Earle H. McRae; Lucian Bayard Mitchell; J. Brown Wallace.

Holmes County

CHATTAHOOCHEE—John D. Gable.

Jackson County

MARIANNA—Daniel C. Campbell.

Jefferson County

MONTICELLO—James Ragan McEachern.

Lafayette County

ALTON—Walter Joseph Baker; Percy Herbert Brigham.

Lake County

CLERMONT—Joseph Haskell Chiles; John Alfred Newham. LEESBURG—Tucker Lucas Randolph. SORRENTO—Shores Erastus Clinard; Osmer Lionel Callahan. TAVARES—Sanford Carl Colley.

Lee County

BOCOGRANDE—George Elliott Atwood. FORT MYERS—Henry Elliott Parnell.

Leon County

MICCOSUKEE—Edgar Eugene Strickland. TALLAHASSEE—George Humphrey Gwynn Jr.; Humphrey Wilson Gwynn; John Kent Johnston; Otis Gilben Kendrick; Frederick Clifton Moor.

Levy County

WILLISTON—Grover C. Freeman. OTTER CREEK—Robert Francis McLeod.

Liberty County

HOSFORD—Kenneth McCaskill Davis; Sterling Edwin Wilhoit.

Madison County

GREENVILLE—Loren A. Greene; Angus James Smith. MADISON—Eustace Long.

Manatee County

BRADENTOWN—Samuel G. Hollingsworth. MYAKKA CITY—Frank R. Haura. PALM BEACH—Owen Hill Kenan. PALMETTO—MacMiller Harrison; Bedford Eugene Vaughan. SARASOTA—John Halton; Frederick William Schultz.

Marion County

CITRA—Everard Blackshear. DUNNELLON—Robert Creswell Black. McINTOSH—Adam Clark Walkup. OCALA—Wallace P. Crigler; Henry C. Dozier; Frank Elmer McClane; Harry Farlin Watt.

WEIRSDALE—Wince A. J. Johnon.

Monroe County

KEY WEST—Frank E. Artaud; George Rochefoucauld Plummer; Joseph Y. Porter Jr.; William R. Warren.

Orange County

ORLANDO—Harold M. Beardall; Milne Barker Swift.

Osceola County

KISSIMMEE—Hugh St. Clare Geiger.

Pasco County

TRILBY—Harvey Otis Byrd.

Pinellas County

CLEARWATER—James W. Davidson; Lucian Brown Dickerson. PASSA-GRILLE—Claude Vernon Gautier. ST. PETERSBURG—Morton H. Asline; Ludlow Lambdin; John William McClane; George Merrill Randall. TARPON SPRINGS—Ralph Dollahan Murphy; Willie Joseph Vinson.

Polk County

BARTOW—Heber Peacock Newman; Knowles Gittings Oglesby. HAINES CITY—Holden E. Cline. LAKELAND—Ralph Duffy; John D. Griffin; William Rowan Groover; William Benjamin Moon; Willis Herman Watson. MULBERRY—Paul Lewis Goss. NICHOLS—Walter Philip Dickinson; Alex M. C. Jobson.

Santa Rosa County

PACE—John Calvert Holley. MILTON—Zebulon V. Johnston.

Seminole County

SANFORD—Thomas Albert Neal; Ralph Edwin Stevens.

St. John County

ST. AUGUSTINE—James Burnie Griffin; Maurice Eby Heck; Jacob John Spencer.

St. Lucie County

FORT PIERCE—Benjamin Leland Whitten.

Sumter County

BUSHNELL—Roscoe Conkling Hubbard. OXFORD—Roy H. Bryant.

Suwanee County

LIVE OAK—Archie Cowan Watson. WELLBORN—George Sterling McClellan.

LIVE OAK—William C. White.

Taylor County

BLUE CREEK—George William DuPree. LOUGHRIDGE—Ralph James Greene.

Volusia County

DAYTONA—J. E. Rowlings; Roy Howe. DE LAND—Robert Fairleigh McDaniel; John MacDiarmid.

NEW SMYRNA—Roy Roswell Niblack.

MEDICAL ASSOCIATION OF GEORGIA

Officers 1917-18

Eugene E. Murphey, President..........Augusta
R. D. Little, First Vice President..........Thomasville
E. C. Thrash, Second Vice President..........Atlanta
Wm. C. Lyle, Secretary-Treasurer..........Augusta

Councilor Districts and Officers

First District.—Burke, Jenkins, Screven, Bullock, Effingham, Tattnall, Bryan, Chatham, McIntosh and Liberty counties. A. J. Mooney, Councilor, Statesboro.

Second District.—Calhoun, Dougherty, Early, Baker, Mitchell, Miller, Dectaur, Thomas, Worth, Colquitt, Grady and Tift counties. C. K. Sharp, Councilor, Arlington.

Third District.—Taylor, Macon, Terrell, Schley, Sumter, Dooley, Lee, Stewart, Clay, Quitman, Crisp and Randolph counties. V. O. Harvard, Councilor, Arabi.

Fourth District.—Carroll, Heard, Coweta, Troup, Meriwether, Harris, Talbut, Muscogee, Marion and Chattahoochee counties. H. W. Terrell, Councilor, La Grange.

Fifth District.—Douglass, Fulton, DeKalb, Rockdale and Campbell counties. W. L. Champion, Councilor, Atlanta.

Sixth District.—Fayette, Henry, Spalding, Butts, Pike, Upson, Monroe, Jones, Bibb, Clayton, Crawford and Jasper counties. J. O. Elrod, Councilor, Forsythe.

Seventh District.—Dade, Walker, Catoosa, Whitefield, Murray, Chattooga, Gordon, Floyd, Bartow, Polk, Haralson, Paulding and Cobb counties. E. M. Bailey, Councilor, Acworth.

Eighth District.—Franklin, Hart, Madison, Elbert, Clarke, Oglethrope, Oconee, Wilkes, Morgan, Greene, Walton, Putnam and Newton counties. W. E. McCurry, Councilor, Hartwell.

Ninth District.—Fannin, Union, Townes, Rabun, Gilmer, Lumkin, White, Habersham, Pickens, Dawson, Hall, Banks, Cherokee, Forsythe, Jackson, Milton, Gwinnett and Stephens counties. L. C. Allen, Councilor, Hoschton.

Tenth District.—Taliaferro, McDuffie, Lincoln, Hancock, Jefferson, Richmond, Wilkinson and Baldwin counties. J. A. Price, Councilor, Milledgeville.

Eleventh District.—Appling, Jeff Davis, Irwin, Coffee, Wayne, Brooks, Clinch, Echols, Ware, Charlton, Pierce, Camden, Glynn, Berrien, Lowndes, Ben Hill and Turner counties. J. G. Tuten, Councilor, Jesup.

Twelfth District.—Dodge, Emanuel, Houston, Johnson, Laurens, Montgomery, Pulaski, Telfair, Toombs, Twiggs and Wilcox counties. E. T. Coleman, Councilor, Graymont.

GEORGIA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Appling	604	60.4	12,318	1,231	10	..	8	8	8	1
Bacon	300	75.0	5,505	1,376	4	..	4	4	1	..
Baker	357	119.0	8,899	2,966	3	..	2	3	1	..
Baldwin	307	9.5	18,781	586	32	..	21	29	21	7
Banks	222	22.2	11,755	1,175	10	..	4	7	6	1
Barrow	115	7.1	17,316	1,084	16	..	10	14	13	3
Bartow	471	39.2	28,719	897	32	..	12	23	13	2
Ben Hill	256	13.0	11,863	523	19	..	8	14	11	4
Berrien	735	24.5	22,772	759	30	..	22	29	20	7
[1]Bibb	277	2.6	61,152	576	106	1	50	87	65	14
Bleckley	450	45.0	11,302	1,130	10	..	4	8	2	2
Brooks	514	20.5	27,616	1,105	25	..	14	23	11	5
Bryan	431	86.2	7,125	1,425	5	..	3	4	1	..
Bulloch	887	38.5	26,464	1,150	23	..	10	20	10	1
Burke	956	41.5	27,268	1,185	23	..	14	17	11	2
Butts	203	13.5	14,222	948	15	1	7	12	9	1
Calhoun	284	16.7	12,837	755	17	..	9	15	7	2
Camden	711	142.2	7,705	1,541	5	..	2	3	..	1
Campbell	213	17.7	11,863	988	12	..	7	11	..	3
Candler	390	65.0	8,454	1,409	6	..	4	5	2	..
Carroll	492	10.4	33,977	722	47	..	25	36	30	4
Catoosa	169	33.8	8,179	1,635	5	..	2	3	1	..
Charlton	905	452.5	5,547	2,773	2	..	2	2	..	..
[2]Chatham	370	2.9	85,859	676	127	1	81	110	69	21
Chattahoochee	218	43.6	5,586	1,117	5	..	1	2	..	..
Chattooga	328	19.2	14,087	828	17	..	8	12	5	..
Cherokee	429	22.5	17,696	931	19	..	10	15	1	..
Clarke	114	2.5	27,334	621	44	1	17	36	22	8
Clay	203	22.5	9,246	1,027	9	..	4	6	3	..
Clayton	142	12.9	11,077	1,007	11	..	7	10	..	..
Clinch	961	137.3	8,424	1,203	7	..	4	6	2	1
Cobb	353	8.6	31,123	759	41	..	22	31	19	4
Coffee	901	27.3	21,953	665	33	..	23	28	18	7
Colquitt	529	16.0	24,281	735	33	..	20	30	21	..
Columbia	350	35.0	13,551	1,355	10	..	5	9	1	1
Coweta	470	13.4	31,590	902	35	..	19	24	14	4
Crawford	319	106.3	8,310	2,770	3	..	2	3	1	..
Crisp	277	13.8	16,423	821	20	..	11	17	12	1
Dade	186	46.5	4,139	1,034	4	..	1	3	1	..
Dawson	216	208.0	4,686	2,343	2	..	3	2	..	..
Decatur	823	24.9	33,487	1,014	33	..	24	29	15	4
Dekalb	272	8.0	28,064	825	34	1	18	29	10	4
Dodge	431	20.5	24,619	1,172	21	..	14	16	12	1
Dooly	397	20.8	20,554	1,081	19	..	10	15	9	1
Dougherty	342	14.2	17,755	739	24	..	18	22	16	1
Douglas	208	20.8	9,105	910	10	..	5	8	1	1
Early	524	30.8	20,527	1,207	17	..	8	14	10	2
Echols	362	362.0	3,382	3,382	1	..	6	1	..	..
Effingham	448	44.8	11,166	1,116	10	..	5	8	6	..
Elbert	361	13.8	27,334	1,051	26	..	16	23	13	5
Emanuel	935	28.3	25,140	761	33	..	21	29	19	4
Evans	350	43.7	9,639	1,201	8	..	4	7	5	..
Fannin	401	40.1	13,568	1,356	10	..	5	8	6	..
Fayette	234	16.5	11,587	724	16	..	6	10	..	..
Floyd	502	10.6	39,380	837	47	..	24	34	22	4
Forsyth	247	27.4	12,224	1,358	9	..	7	9	2	..
Franklin	279	13.9	20,126	1,006	20	..	11	18	16	4
[3]Fulton	183	0.3	226,557	418	542	5	359	446	231	113
Gilmer	440	55.0	9,237	1,154	8	..	3	5	3	1
Glasscock	170	28.3	4,780	796	6	..	1	3	1	1
Glynn	439	24.3	16,745	930	18	..	8	12	3	..
Gordon	375	14.4	17,132	658	26	..	14	23	12	..
Grady	444	40.3	21,379	1,943	11	..	9	10	7	1
Greene	416	26.0	19,949	1,246	16	..	10	12	4	..
Gwinnett	491	12.9	26,982	710	38	..	24	34	11	4
Habersham	290	17.0	11,398	670	17	..	13	12	9	2
Hall	437	12.1	29,364	815	36	..	15	27	15	3
Hancock	530	33.1	19,851	1,240	16	..	10	10	7	3
Haralson	284	14.2	14,676	733	20	..	4	12	8	1
Harris	501	38.5	17,886	1,375	13	..	6	9	1	..
Hart	261	20.0	17,474	1,344	13	..	7	11	9	2
Heard	258	36.8	11,197	1,599	7	..	5	6	..	1
Henry	324	19.0	20,894	1,229	17	..	11	13	4	1

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1. Includes Macon, population 4[illegible]415; physicians 99 [M.R.C. 14].
2. Includes Savannah, population 68,361; physicians 125 [M.R.C. 21].
3. Includes Atlanta, population 18[illegible]873; physicians 513 [M.R.C. 111].

GEORGIA — continued

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Houston	595	34.4	24,316	1,430	17	..	8	14	2	3
Irwin	378	31.5	10,461	871	12	..	11	12	7	2
Jackson	433	16.6	24,846	955	26	..	10	17	19	1
Jasper	321	24.6	17,661	1,358	13	..	9	9	6	1
Jeff Davis	300	42.8	6,050	864	7	..	3	4	3	..
Jefferson	720	37.8	23,692	1,246	19	..	10	12	13	1
Jenkins	342	33.0	11,520	1,280	9	..	5	6	6	1
Johnson	292	15.3	18,983	720	19	..	6	11	10	..
Jones	377	37.7	13,103	1,310	10	1	6	8	4	..
Laurens	806	16.7	42,502	885	48	..	29	40	19	6
Lee	326	40.7	12,653	1,581	8	..	3	7	1	..
Liberty	936	85.0	12,924	1,174	11	..	7	8	..	..
Lincoln	291	36.3	9,852	1,231	8	..	4	7	1	..
Lowndes	482	13.0	27,648	747	37	..	21	34	17	5
Lumpkins	280	140.0	5,444	2,722	2	..	1	2	..	..
McDuffie	287	35.8	10,706	1,337	8	..	2	5	5	2
McIntosh	470	94.0	6,442	1,288	5	..	3	4	..	2
Macon	369	26.3	15,688	1,120	14	..	8	10	5	1
Madison	284	14.2	19,497	974	20	..	6	15	12	1
Marion	360	45.0	9,147	1,143	8	..	5	5	6	1
Meriwether	496	14.1	26,523	757	35	..	15	24	9	3
Miller	253	31.6	9,202	1,150	8	..	8	8	4	1
Milton	145	24.1	7,585	1,264	6	..	5	5	..	1
Mitchell	548	20.7	27,477	1,056	26	..	15	22	12	4
Monroe	584	53.0	20,450	1,859	11	1	8	8	7	1
Montgomery	591	39.4	19,638	1,309	15	..	13	13	10	1
Morgan	390	22.9	22,565	1,327	17	1	9	13	1	2
Murray	342	38.0	10,593	1,177	9	..	5	8	..	..
Muscogee	235	3.8	40,891	670	61	1	34	50	34	10
Newton	262	10.4	19,699	787	25	..	12	17	4	1
Oconee	172	15.6	12,928	1,175	11	..	5	9	5	2
Oglethorpe	504	38.7	19,263	1,481	13	..	5	8	3	..
Paulding	324	32.4	14,967	1,496	10	..	4	8	6	..
Pickens	231	28.8	9,332	1,166	8	..	5	7	6	..
Pierce	605	50.4	12,282	1,023	12	..	8	12	6	3
Pike	307	13.9	20,028	910	22	..	13	18	12	2
Polk	317	11.3	21,916	782	28	..	11	18	10	3
Pulaski	463	35.6	14,705	1,131	13	..	7	8	4	..
Putnam	361	45.1	14,195	1,774	8	..	4	6	4	..
Quitman	144	72.0	4,594	2,297	2	..	2	1	..	..
Rabun	377	75.4	5,562	1,112	5	..	4	4	..	..
Randolph	412	18.7	20,297	922	22	..	9	16	12	2
Richmond	319	2.7	62,645	540	116	2	69	95	69	33
Rockdale	119	19.8	9,938	1,656	6	..	1	5	1	..
Schley	154	38.5	5,213	1,053	4	..	2	3	2	..
Screvens	791	30.5	20,202	777	26	..	10	17	6	4
Spalding	209	9.5	21,270	966	22	..	12	17	13	4
Stephens	166	11.8	10,911	781	14	..	9	13	9	..
Stewart	411	27.4	13,437	895	15	..	8	10	7	1
Sumter	456	13.4	31,193	916	34	..	22	28	14	3
Talbot	312	27.4	11,696	1,063	11	..	6	9	2	3
Taliaferro	212	26.5	9,388	1,173	8	..	2	5	4	..
Tattnall	642	32.1	18,569	928	20	..	8	15	16	2
Taylor	340	30.9	11,563	1,051	11	..	6	9	7	2
Telfair	373	20.7	15,627	868	18	..	13	15	7	..
Terrell	322	14.0	24,178	1,051	23	..	14	21	13	2
Thomas	530	13.9	33,517	882	38	..	18	31	17	5
Tift	243	13.5	11,487	638	18	..	13	15	12	4
Toombs	393	21.8	11,206	622	18	..	11	16	10	1
Towns	181	36.2	3,932	786	5	..	1	4	..	1
Troup	435	8.7	27,851	557	50	..	23	39	24	3
Turner	231	17.7	10,075	775	13	..	11	13	9	1
Twiggs	314	31.4	12,210	1,221	10	..	5	8	..	1
Union	324	54.0	6,918	1,153	6	..	2	4	..	1
Upson	317	31.7	12,757	1,275	10	..	7	9	16	..
Walker	432	16.0	20,905	774	27	..	12	17	16	4
Walton	370	12.3	25,286	842	30	..	17	24	3	5
Ware	804	23.6	28,860	848	34	..	22	26	16	6
Warren	404	80.8	12,148	2,029	5	..	3	4	2	2
Washington	669	21.5	28,174	908	31	..	15	19	21	2
Wayne	764	47.7	15,710	981	16	..	10	14	10	..
Webster	302	75.5	6,151	1,537	4	..	3	4	4	..
Wheeler	280	35.0	9,071	1,133	8	..	5	7	..	..
White	245	35.0	5,110	730	7	..	..	5	..	..
Whitefield	283	14.8	16,973	893	19	..	13	16	2	1
Wilcox	403	23.7	13,486	791	17	..	10	15	8	1
Wilkes	458	28.6	25,320	1,582	16	..	11	15	6	2
Wilkinson	472	39.3	10,078	839	12	..	7	8	1	1
Worth	651	24.1	19,148	709	27	1	14	23	10	3
Totals	60,610	17.3	2,875,205	837	3,436	17	1,956	2,757	1,551	432

HONOR ROLL

Appling County

BAXLEY—Joseph Eugene Mercer.

Baldwin County

MILLEDGEVILLE—Edwin Whitaker Allen; Wiles H. Allen; Charles T. Caraker; Young Allen Little; James Kenneth Pettit; James Addison Price; Ernest Boling Saye.

Banks County

MAYSVILLE—Quintard Taylor.

Barrow County

AUBURN—Henry Daniel Coffee. BETHLEHEM—Ernest Robert Harris. WINDER—Wm. L. Mathews.

Bartow County

CARTERSVILLE—Sam Monroe Howell. CASSVILLE—William Franklin Cross.

Ben Hill County

FITZGERALD—John L. Fraser; James Martin J. Luke; John W. McElroy; Warren McCremmon Royal

Berrien County

ADEL—LeRoy Hutchinson. ALAPAHA—Thomas Ralph Moye. NASHVILLE—Guy S. Selman. RAY CITY—Francis Marion Burkhalter; Lawson S. Rentz.

ADEL—Ethridge James Hall.
NASHVILLE—William Carl Rentz.

Bibb County

MACON—Ernest Corn; Melton Downie Council; Charles C. Harrold; Chas. C. Hinton; John Parkham Holmes; Walter Richard Holmes Jr.; George Lawson Johnson; George Yellott Massenburg; Linton Cobb McAfee; Thomas Primus Moore; John Armistead Selden; John Monroe Sigman; Rupert Hope Stovall; Fred Leland Webb.

Bleckley County

COCHRAN—Chapman Q. Dykes; Wm. Chas. Williams Jr.

Brooks County

MORVEN—John F. Burkhalter. QUITMAN—James F. Arthur; Leighton A. Smith; Hugh Wesley Wade; Wm. L. Wilkinson.

Bullock County

STATESBORO—Herbert Bradley Kennedy. .

Burke County

GIRARD—Louis Bartow Royal. WAYNESBORO—Heber Jones Morton.

Butts County

JACKSON—Roy Autustus Gunter.

Calhoun County

ARLINGTON—Cyrus Kosciusko Sharp. MORGAN—Jesse Homer Hendry.

Camden County

KINGSLAND—Arthur Bernheim Prince.

Campbell County

FAIRBURN—Reuben Thornton Camp; Charles Harry Harvey; C. S. Merriam.

Carroll County

CARROLLTON—Sam Brock; Ira Clifton Hinkle Garst; Glen B. Mullins. TEMPLE—John Riley Turner.

Chatham County

SAVANNAH—James Malone Bryant Jr.; John William Daniel; Daniel Brennan Edwards; George Lewis Fuquay; Gordon Lewis Groover; Wm. Agustus Harris; Lee Howard; John P. Jones; Needham Lawton Kirkland; George Herrmann Lang; Lawrence Lee; Thomas Claude Lovelace; Charles Clayton Middleton; William B. Orear; Harry Rubin; Lowndes Walton Shaw; Everett J. Stothart; Lloyd B. Taylor; DeLamar Turner; Thomas M. Vorbrinck; William Herman Myers.

Clarke County

ATHENS—Edward Merriman Coleman; Dan Hughes Dupree; Fred Douglas Harris; William Alfred Harris; Farris Lucius Jackson; Andrew McCaulay Jones; Jack Herbert Swafford; Harold Irwin Reynolds.

Clinch County

HOMERVILLE—Leland H. Dame.

Cobb County

MARIETTA—Warren E. Benson; Leslie Lenton Blair; Wm. M. J. Gober. ACWORTH—William Clayton Humphries.

Coffee County

BROXTON—Cleveland Ward Findley. [illegible] R. Smith. NICHOLLS—Jefferson Paffor [illegible] Hall. WILLACOOCHEE—Henry T. Co [illegible]

Columbia County

HARLEM—Albert Byron Martin.

Coweta County

NEWNAN—Raymond Holmes Carter; Myron Hall Farmer; Joseph B. Peniston. SENOIA—James Mercer Tribble.

Crisp County

ARABI—Walter Arthur Miller.

Decatur County

BAINBRIDGE—Mortimer A. Ehrlich; Sigo Ehrlich; Joseph Howard Griffin; Leonard Wannbacher Willis.

De Kalb County

DECATUR—James Fling Pitman. LITHONIA—Claude Alexander Almand. STONE MOUNTAIN—Virgil Waite Osborne.

OAKHURST—William Parks Phillips.

Dodge County

EASTMAN—Ferdinand Herrmann.

Dooly County

VIENNA—Carl Wilton Lupo.

Dougherty County

ALBANY—John A. White.

Douglas County

DOUGLASVILLE—Ralph Emerson Hamilton.

Early County

BLAKELY—Philip Hamilton Fitzgerald; William O. Shepard.

Elbert County

COLDWATER—Thomas H. Gaines. ELBERTON—Albert S. Johnson; William J. Matthews; Benjamin B. Mattox. MIDDLETON—Homer Melvan Daniel.

Emanuel County

NUNEZ—William Gordon Herrington. OAK PARK—John Walton Durden. STILLMORE—Rufus Elliott Graham. SUMMIT—Clinton Remis Riner.

Floyd County

ROME—Burton Paul Bradley; Joseph Harry Mull; George Barker Smith; Wm. Agustus Dean.

Franklin County

CANON—Benjamin F. Bond; John Hudson Terrell Jr. COLUMBUS—F. L. Crosby Jr. LAVONIA—William Wallace Cornog.

Fulton County

ATLANTA—William N. Adkins; Emmet B. Anderson; Mell Aycock; Edgar G. Ballenger; Forrest M. Barfield; Joseph Rex Barfield; Hugh I. Battey; Thomas Richard Beech; John Davies Blackburn; Wm. Clarke Blandford; Roy Blosser; Frank Kells Boland; Montague Lafitte Boyd; Harry B. Bradford; Albert Ferguson Brawner; Walpole C. Brewer; Stephen Treadwell Brown; Arthur Davis Browne; Allen Hamilton Bunce; Edwin S. Byrd; Jesse L. Byrd.

James T. Calloway; Iverson C. Case; Ernest Stewart Colvin; John Hightower Cooper; Moses Bernard Copeloff; James C. Corry; Zachary Stuart Cowan; Hansell Crenshaw.

Leo Paul Daly; Richard Randolph Daly; Edward Campbell Davis; Thomas Callihan Davison; John Fletcher Denton; John Sebastian Derr; Charles Edward Dowman; Murdock S. Equen.

Charles Cowdrey Fitts; John Baker Fitts; James Quitman Folmor; Charles Glenville Giddings; Edgar Hill Greene.

James Gustin Hall; John Howard Hall; Francis Young Harrington; Stephen T. Harris; Henry W. S. Hayes; John Carswell Hind Jr.; Joseph H. Hines; Frederick Grady Hodgson; Cornelius F. Holton; Jesse L. Howell.

Thomas F. Jackson; William Andrew Jackson; Sidney Hughes Jacobs. Lewis Jasper Keeling; Luther Hilliard Kelly; Claud Thomas Key; Marcus Klausman

Charles Edward Lawrence; Arnold H. Lindorme; Rankin Robert Lowery.

Daniel Nichola Matheson; James Arren McAllister; James Calhoun McDougall; Henry Martin McGee; James Patton McGee; Floyd W. McRae; Jesse Littleton Meeks; Oscar Lee Miller; Lewie Hudson Muse.

Homer Erwin Nash; Job C. Patterson; James Edgar Paullin; Mark P. Pentecost; Weldon Edwards Person; Marion C. Prauitt.

Andrew F. Quillian; Frank P. Raiford; Homer L. Redd; Charles Mallory Remsen; James William Roberts Jr.; Stewart Ralph Roberts; Herbert Jerome Rosenberg; Dunbar Roy.

Henry Clifford Sauls; Edgar DeWitt Shanks; Harvey W. Snyder; John Wilson Somerville; Thomas H. Stewart; Cecil Stockard.

Northern Orr Tribble; John W. Turner; Wilborn Arthur Upchurch; Charles Belle Upshaw.

Charles Edward Waits; Barney Oldfield Weinkle; Carlton Juan Wellborn; Carroll Mulkey West; Lee Wilbert Wiggens; Cleo Duke Wilder; Evans B. Wood; Louis Tompkins Wright; Lucius Featherstone Wright; Luther T. Young; Wm. Walter Young. COLLEGE PARK—Kinsey E. Foster. SANDERSVILLE—Fred Bangs Rawlings.

ATLANTA—John Wesley Burney; Miller Bone Hutchins; Edwin Napoleon Mauer; Cyrus Warren Strickler; Wm. Fall Wiggins.

Gilmer County

ELLIJAY—Clarence Goolsby Cox.

Glascock County

AGRICOLA—William Aaron Gibson Jr.

Grady County

WHIGHAM—Leon E. Brawner.

Gwinnett County

GRAYSON—Chas. Henry Dickens. LAWRENCEVILLE—Chalmers Hinton; Daniel Claude Kelly; Adrian Dallas Williams.

Habersham County

ALTO—Robert Edwin McClure. CORNELIA—David Harrison Garrison.

Hall County

GAINSVILLE—Henry G. Banister; Horace Edmund Crow; Cleveland Davis Whelchel.

Hancock County

DEVEREUX—Wilbur Moate Scott. POWELTON—Oma Ernest Herndon. SPARTA—Richard Binion.

Haralson County

BUCHANAN—Eugene F. Sanford.

Hart County

HARTWELL—Wm. Edgar McCurry; Albert Owen Meredith.

Heard County

FROLONA—John Rodney Manly.

Henry County

HAMPTON—Wm. Hall Lyday.

Houston County

BYRON—Henry Jackson Peavy Jr. FORT VALLEY—Virginias Lynn Brown; Roy Clayton Smisson.

Irwin County

MYSTIC—Henry P. Lyon. OCILLA—William S. Armor.

Jackson County

JEFFERSON—Jesse Hope Campbell.

Jasper County

MONTICELLO—William Augustus Williams.

Jefferson County

STAPLETON—Lucius Pierce Farmer.

Jenkins County

MILLEN—Mark Edward Perkins.

Laurens County

DUBLIN—Thomas Jos. Blackshear; Ovid Hugh Cheek; John Wm. Edmonson; Charles Augustus Hodges; Landrum J. Page; Sidney Walker.

Lowndes County

VALDOSTA—Carl Ellis Dunaway; Frank Bird; Claude Goldwin Scruggs; William David Sloan; Thomas Harding Smith.

Macon County

MONTEZUMA—Homer G. Lightner.

Madison County

DANIELSVILLE—Walter Reynolds McCoy.

Marion County

BUENA VISTA—Ruben Shirley O'Neal.

McDuffie County

DEARING—James Roscoe Sams. THOMSON—Clifford Loomis Bartlett.

McIntosh County

DARIEN—Stewart McBryde; Charles Jefferson Woods.

Meriwether County

BULLOCHVILLE—Robert Harley McDonald. GAY—William Phelps Ellis. MANCHESTER—Oscar Wilson DeVaughan.

Miller County

COLQUITT—Buford Cosby Bird.

Milton County

ALPHARETTA—George Carter Brooke.

Mitchell County

CAMILLA—Eric Thornton Newson; John McGregor Spence; John Calvin Turner Jr. SALT CITY—David P. Belcher.

Monroe County

FORSYTH—Guy W. Williams.

Montgomery County

SOPERTON—Eugene H. Thompson.

Morgan County

MADISON—James Harold Nicholson. RUTLEDGE—Grover Cleveland Gambrell.

Muscogee County

COLUMBUS—Henry Wells Brooks; Roland Lee Brooks; Paul Hopkins Christian; A. Nathan Dykes; Roscoe Felix Johnson; James Henry McDuffie Jr.; John Darley Odom; Clifford Augustin Peacock. MIDLAND—William Franklin Jenkins.

COLUMBUS—Willis Pope Jordan.

Newton County

COVINGTON—David Halsey Parliament.

Oconee County

BOGART—Chester Overton Middlebrooks. WATKINSVILLE—William Monroe White.

Pierce County

BLACKSHEAR—John Wesley Oden; Donald T. Rankin. ZIRKLE—Spencer Atkinson Kirkland.

Pike County

MILNER—Kenneth Stovall Hunt. ZEBULON—Claude Hutcheson Sullivan.

Polk County

CEDARTOWN—Wm. Allen Chapman; Henry M. Hall. ROCKMART—Joseph Harrison Robinson.

Randolph County

CUTHBERT—Whitfield Walker Crook; Lucius Kennedy Patterson.

Richmond County

AUGUSTA—Hinton J. Baker; James Harvey Butler.

Thomas Davies Coleman; John F. Cremens; William D. Cutler.

Thomas Lyles Davis; Robert C. Eve; William Talmage Freeman; Jesse Ansley Griffin; Lexius Henson Harper; William Gordon Hunter.

Nathaniel Hawthorne Lang; Samuel Lichtenstein; William Clifton Lyle.

Henry Holcombe Malone; Wm. Harris Mathis; James A. McGarity; Henry M. Michel; Francis Xavier Mulherin; Eugene E. Murphy; Theodore E. Oertel; Isaac Jefferson Parkerson; Robert Lewis Rhodes; Joseph Righton Robertson.

Henry William Shaw; David Marion Silver; Oscar Smith Spivay; Robert Hendrix Stanley; William Manning Tappan; George A. Traylor; Walter Whitney; Everard Ausley Wilcox. HEPHZIBAH—Robert Emmett Corley.

Screvens County

MEARS—Frank Mims. SYLVANIA—John C. Cail; George Henry Faggart; Alton Bowie Reddick.

Spalding County

EXPERIMENT—Wm. S. Howard. GRIFFIN—Augustus Frye; William C. Miles; Edwin Raphael Anthony Jr.

Stewart County

LUMPKIN—Milton Walton.

Sumter County

AMERICUS—Herschel Aticus Smith; Earl Hugh Verne. PLAINS—Bowman Joel Wise.

Talbot County

BOX SPRINGS—Alvah Willie White. TALBOTTOM—William Campbell Douglass; Thomas Ennis Pugh.

Tattnall County

COBBTOWN—Homer Bowen. COLLINS—Algernon Columbus Colson.

Taylor County

CHARING—James Murray Cook. REYNOLDS—James A. Fountain.

Terrell County

DAWSON—Lucius Lamar. SASSER—Henry Lonzoe Akridge.

Thomas County

PAVO—John Miller Beggs; Elmer E. Mansfield. THOMASVILLE—William W. Jarrell; Edwin Lawrence Lawson; Henry McIntosh Moore.

Tift County

OMEGA—Marcus LaFayette Webb. TIFTON—Edwin Rutherford Scarboro; Carl Belmont Welch. TY TY—Carl Shepard Pittman.

Toombs County

NORMANTOWN—Solomon Youmans.

Troup County

LA GRANGE—Wall[illegible] Henderson Clark; Wm. Hugh Hadaway. WEST POINT—James Dean DeLa[illegible]ar.

Turner County

DAKOTA—Frank Willingham Rogers.

Twiggs County

JEFFERSONVILLE—Smith W. Ray.

Walker County

CHICKAMAUGA—Chauncey L. Chase; Horace Frank Stillner. FLINTSTONE—Hampton Morgan Barker. LAFAYETTE—Robert Mitchell Coulter.

Walton County

CAMPTON—Jesse Judson Everett. MONROE—William Tandy Randolph. SOCIAL CIRCLE—Walter Eugene Mobley; Harry Lee Upshaw.

Ware County

WAYCROSS—James J. Beaton; Paul Peyton Lane; Benjamin H. Minchew; Francis Clifford Nesbit; Robert Carroll Walker; Chester Anderson Witmer.

Warren County

CAMAK—Earl Kilpatrick Lazenby. WARRENTON—Alton Walker Davis.

Washington County

SANDERSVILLE—Thomas Byron King; George S. McCarty.

Whitfield County

TILTON—Egbert Marridy Townsend.

Wilcox County

PITTS—Hanser Ashford Dorsey.

Wilkes County

WASHINGTON—George Washington Kelly; Olando Samuel Wood.

Wilkinson County

GORDON—Claude Brantley Brookins.

Worth County

OAKFIELD—Charley Kendrick Wall. SYLVESTER—James J. Crumbley; Walter Kenneth Stewart.

IDAHO STATE MEDICAL ASSOCIATION

Officers 1917-18

Wm. F. Smith, President....................Boise
Oscar C. Carssow, Vice President....................Lewiston
Ed. E. Maxey, Secretary-Treasurer....................Boise

IDAHO

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Ada	1,136	23.7	41,884	831	48	3	25	39	22	6
Adams	2,870	2870.0	6.700	6,700	1	..	1	..	..	1
Bannock	3,179	113.5	24,746	881	28	1	22	24	11	9
Bear Lake	942	117.7	8,223	1,028	8	..	7	8	4	2
Benewah	1,450	145.0	4,500	450	10	1	6	8	1	2
Bingham	4,116	316.6	13,601	1,046	13	1	6	10	3	2
[1]Blaine	6,120	Note 1	10,933	......	6	..	5	5	2	2
[2]Boise	3,469	3469.0	13,100	13,100	1	..	1	1	..	..
Bonner	3,129	260.7	15,813	1,318	12	..	4	9	10	4
Bonneville	4 000	363.6	19,370	1,761	11	..	9	11	2	..
Boundary	2,950	983.3	4,893	1,231	3	..	2	2	2	1
[3]Butte	Note 3				3	..	..	3	..	..
[1]Camas	Note 1				3	..	..	3	2	1
Canyon	1,283	44.2	24,100	831	29	..	13	20	7	4
Cassia	2,611	217.6	9,763	813	12	..	11	11	7	1
Clearwater	2,500	625.0	9,068	2,267	4	..	2	3	3	..
Custer	4,589	1529.7	3,695	1,232	3	..	3	3	..	1
Elmore	2,665	533.0	6,610	1,322	5	..	3	4	.	..
Franklin	1,200	240.0	7,500	1,500	5	..	4	4	3	2
Fremont	6,006	750.7	12,167	1,521	8	..	8	8	1	1
Gem	1,280	256.0	7,172	1,434	5	..	3	4	2	1
Gooding	912	157.0	7,536	1,256	6	..	4	6	1	..
Idaho	11 012	734.1	14,766	984	15	..	4	10	1	1
Jefferson	3 800	542.8	7,711	1,101	7	..	4	5	1	..
Kootenai	2 043	120.2	30,319	1,783	17	..	11	13	3	3
Latah	1,128	51.3	22,735	1,033	22	..	12	15	11	7
Lemhi	4,867	973.4	5,764	1,153	5	..	3	3	1	..
Lewis	1,200	100.0	6,130	511	12	..	4	9	2	2
Lincoln	3,283	364.8	6,754	750	9	..	7	9	2	2
Madison	1,100	220.0	9,545	1,909	5	..	4	5	1	..
Minidoka	2,200	583.3	6,338	1,056	6	..	6	6	1	..
Nez Perce	3,841	147.8	21,742	836	26	2	13	18	15	3
Oneida	2,665	533.0	7,750	1,550	5	..	2	4	1	2
Owyhee	7,893	1972.0	4,219	1,055	4	..	2	3	3	1
[3]Payette	Note 3				8	..	..	6	3	..
Power	2,600	433.3	7,750	1,292	6	1	5	5	2	1
Shoshone	2,579	128.9	16,464	823	20	..	16	18	6	..
Teton	950	316.6	3,502	1,167	3	..	2	3	..	.
Twin Falls	1,888	52.4	23,232	619	36	..	19	32	15	6
[3]Valley	Note 3				2	..	1	1	..	..
Washington	2,871	163.0	7,479	440	17	..	9	15	2	2
Totals	83,203	185.5	418,577	909	449	9	262	366	156	70

1. Blaine county includes Camas county. These two counties together have 1 physician for every 680 square miles and 1 for every 1,215 people.

2. Includes Boise, population 31,711; physicians 42 [M.R.C. 6].

3. These three counties were made from parts of other counties, but no information is available as to the counties from which they were taken.

HONOR ROLL

Ada County

BOISE—Charles Brersford Callard; Ralph Falk; Ernest Ellsworth Laubaugh; Edward Ernest Maxey; Fred Allen Pittenger; Maurice Henry Tallman.

Adams County

NEW MEADOWS—Robert Theodore Whiteman.

Bannock County

INKOM—James Fuller Miller. POCATELLO—Leo Francis Castle; William Forrest Howard; Francis Herbert Poole; Francis Palmer Richard; Clyde Tennyson Smith; Charles Henry Sprague; Frank M. Sprague. SODA SPRINGS—Ellis Kackley.

Bear Lake County

PARIS—Julius Leo Arntzen; Charles Otto Moore.

Benewah County

ST. MARIES—Robert Stanley Kneeshaw; Owen Dale Platt.

Bingham County

BLACKFOOT—Frank William Mitchell; Walter E. Patrie.

Blaine County

BELLEVUE—Austin George Byrd. HAILEY—Erwin Warner Kleiman.

Bonner County

HOPE—C. S. Moody. LACLEDE—Claude Warren Williams. PRIEST RIVER—Jesse William Ingram. SANDPOINT—O. F. Page.

Boundary County

BONNERS FERRY—Samuel Thompson Faucett.

Camas County

FAIRFIELD—DeWitt Price Higgs.

Canyon County

CALDWELL—Fern Morton Cole. NAMPA—Clyde Emil Watson. PARMA—Donald S. Numbers. PAYETTE—Junious E. Crouch.

Cassia County

BURLEY—George Cooper.

Custer County

MACKAY—Roy Earl Mason.

Franklin County

PRESTON—Curtis Bland. WESTON—Roy Woodney Quick.

Fremont County

ST. ANTHONY—Jesse D. Louis.

Gem County

EMMETT—William Hitchcock Tukey.

Idaho County

GRANGEVILLE—Carl Wilson Slusser.

Kootenai County

HARRISON—Frederick William Didier. POST FALLS—Jesse Rees Prichard. ST. MARIES—Raymond David MacRae.

Latah County

JULIAETTA—Ray Thurman Laughbaum. MOSCOW—Joseph Aspray; Frank Lee Barrows; Charles L. Gritman; Johan Christian Wiik; Warren H. Carithers. TROY—James Macpherson McColl.

Lewis County

NEZ PERCE—Charles May Anderson. WINCHESTER—Elton Bane Rogers.

Lincoln County

JEROME—Edward Douglas Piper. RICHFIELD—George G. Fitz.

Nez Perce County

LEWISTON—Frederick T. Harris; Louis J. Perkins; Edgar L. White.

Oneida County

MALAD CITY—William Wesley Brothers; James Marion Kerns.

Owyhee County

BRUNEAU—James Curtis Bartlett.

Power County

ROCKLAND—Vonando Green Logan.

Twin Falls County

BUHL—George Borand Randall. CASTLEFORD—Theo. E. Schwarz. TWIN FALLS—Duncan Lorme Alexander; John Francis Coughlin; C. A. Leigh; Charles Weatherbell.

Washington County

CAMBRIDGE—Simeon Hopper. WEISER—C. Carrol Conant.

ILLINOIS STATE MEDICAL ASSOCIATION

Officers 1917-18

Elmer B. Cooley, President...Danville
E. W. Fiegenbaum, President-Elect..............................Edwardsville
E. P. Sloan, First Vice President...............................Bloomington
Sadie B. Adair, Second Vice President..............................Chicago
W. H. Gilmore, Secretary ....Mt. Vernon
A. J. Markley, Treasurer...Belvidere

Councilor Districts and Officers

First District.—Jo Daviess, Carroll, Ogle, Stephenson, De Kalb, Boone, McHenry, Kane and Winnebago counties. Emil Windmueller, Councilor, Woodstock.

Second District.—Woodford, Livingston, Grundy, Kendall, La Salle, Bureau, Whiteside, Lee, Putnam and Marshall counties. Edwin S. Gillespie, Councilor, Wenona.

Third District.—Lake, Cook, Du Page, Will and Kankakee counties. C. D. Pence, Councilor, Chicago.

Fourth District.—Schuyler, Stark, McDonough, Fulton, Hancock, Henderson, Warren, Knox, Peoria, Henry, Mercer and Rock Island counties. August H. Arp deceased, Councilor, Moline.

Fifth District.—Sangamon, Menard, Mason, Logan, Tazewell, McLean, De Witt, Ford and Iroquois counties. C. S. Nelson, Councilor, Springfield.

Sixth District.—Madison, Jersey, Macoupin, Greene, Morgan, Scott, Cass, Brown, Pike, Adams and Calhoun counties. C. D. Center, Councillor, Quincy.

Seventh District—Piatt, Macon, Christian, Moultrie, Shelby, Montgomery, Bond, Fayette, Effingham, Clinton, Marion and Clay counties. Chas. F. Burkhardt, Councillor, Effingham.

Eighth District.—Champaign, Vermillion, Douglas, Edgar, Coles, Clark, Cumberland, Jasper, Crawford, Richland and Lawrence counties. Cyrus E. Price, Councillor, Robinson.

Ninth District—St. Clair, Monroe, Randolph, Washington, Perry, Jackson, Union, Alexander, Polk, Pulaski, Jefferson, Franklin, Williamson, Johnson, Massac, Saline, Hamilton, Wayne, Hardin, Gallatin, White, Edwards and Wabash counties. Frank C. Sibley, Councilor Carmi.

ILLINOIS

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
[1]Adams	842	8.0	64,588	615	105	3	48	73	66	10
Alexander	226	7.5	25,191	839	30	..	11	20	23	3
Bond	388	16.9	17,801	773	23	2	7	10	12	2
Boone	293	11.7	15,481	619	25	2	9	14	19	2
Brown	297	16.5	10,397	577	18	..	5	9	12	..
Bureau	881	13.3	46,063	697	66	1	28	45	35	8
Calhoun	256	18.3	8,610	615	14	..	7	9	4	2
Carroll	453	14.6	18,035	581	31	1	13	20	22	2
Cass	371	12.7	17,480	602	29	..	10	15	19	3
Champaign	1,043	9.4	51,900	494	111	4	48	77	80	12
Christian	700	13.5	35,909	690	52	2	28	20	24	6
Clark	493	13.7	25,517	708	36	1	14	18	19	6
Clay	462	14.4	18,661	583	32	..	15	15	9	1
Clinton	483	17.9	25,034	926	27	..	18	23	14	5
Coles	525	10.3	34,787	682	51	1	28	39	25	7
[2]Cook	933	0.2	2,818,751	497	5,667	421	3,195	4,577	3,024	920
Crawford	453	9.1	31,421	628	50	1	24	39	30	6
Cumberland	353	25.2	14,281	1,020	14	..	4	10	8	2
Dekalb	638	13.3	34,697	722	48	2	27	32	29	2
Dewitt	415	13.8	18,906	630	30	..	15	23	20	7
Douglas	417	10.9	19,951	525	38	1	15	30	27	7
Dupage	315	5.1	37,252	556	67	10	37	41	27	12
Edgar	621	11.1	27,336	448	56	2	22	33	28	8
Edwards	238	14.9	10,049	628	16	1	4	9	7	2
Effingham	511	13.8	20,055	542	37	..	20	31	33	3
Fayette	729	24.3	28,082	936	30	1	10	18	11	3
Ford	500	21.7	17,096	743	23	1	14	15	15	1
Franklin	445	6.9	30,517	476	64	2	35	46	27	7
Fulton	884	10.4	51,993	511	85	3	36	58	48	6
Gallatin	338	21.1	14,628	914	16	..	5	10	13	..
Greene	515	13.5	22,363	588	38	1	17	28	30	3
Grundy	433	18.8	24,180	1,051	23	2	12	18	13	2
Hamilton	455	22.7	18,227	911	20	2	10	10	9	3
Hancock	780	14.2	30,638	556	55	..	25	39	23	5
Hardin	185	15.4	7,015	584	12	..	4	8	3	..
Henderson	376	23.5	9,724	607	16	..	10	10	11	1
Henry	824	13.5	42,968	704	61	4	24	46	41	1
Iroquois	1,121	20.0	35,543	634	56	3	31	39	39	2
Jackson	588	11.5	36,071	707	51	1	26	39	34	10
Jasper	508	25.4	18,157	907	20	1	11	13	9	2
Jefferson	603	14.0	29,825	693	43	..	18	28	31	7
Jersey	367	18.3	13,951	697	20	..	7	13	9	3
Jo Daviess	623	28.3	22,657	1,029	22	..	12	19	19	2
Johnson	348	15.1	14,331	623	23	1	8	13	13	..
[3]Kane	527	3.2	101,402	615	165	12	76	111	90	16
Kankakee	668	9.0	43,376	586	74	1	42	55	47	12
Kendall	324	23.1	10,777	769	14	..	10	12	11	2
Knox	711	8.3	48,018	588	86	5	44	52	51	10
Lake	455	5.9	70,060	909	77	3	45	55	49	16
La Salle	1,146	9.4	91,851	752	122	6	57	78	84	16
Lawrence	358	10.2	27,141	775	35	..	15	23	18	7
Lee	742	18.1	27,750	676	41	2	14	30	30	3
Livingston	1,043	16.0	40,465	623	65	1	31	48	39	12
Logan	617	10.8	31,335	549	57	3	21	39	27	10
McDonough	588	11.3	26,887	517	52	2	20	38	37	5
McHenry	620	12.4	34,515	690	50	1	22	31	37	10
McLean	1,191	9.2	68,127	528	129	4	40	89	85	20
[4]Macon	585	5.6	61,618	592	104	5	40	61	56	14
Macoupin	860	12.5	56,837	823	69	1	29	44	50	9
Madison	737	6.2	108,207	909	119	2	61	93	94	21
Marion	569	9.5	38,485	641	60	2	25	41	34	7
Marshall	396	17.2	15,679	725	23	..	13	16	13	4
Mason	555	20.5	17,377	543	27	2	15	18	16	3
Massac	240	13.3	14,994	833	18	..	6	14	12	2
Menard	317	16.7	12,796	673	19	..	11	15	16	2
Mercer	540	16.4	19,723	597	33	..	15	21	20	3
Monroe	389	24.3	13,503	856	16	..	9	11	12	..
Montgomery	689	11.7	38,576	653	59	..	26	40	47	11
Morgan	576	7.7	34,420	485	75	6	28	47	57	9
Moultrie	338	16.1	14,630	696	21	..	6	13	11	3
Ogle	756	17.2	27,864	633	44	1	18	27	31	1
[5]Peoria	636	3.2	108,756	546	199	10	86	153	115	23
Perry	451	18.0	23,735	949	25	1	10	16	18	4
Piatt	451	14.1	16,376	543	32	1	16	21	19	4
Pike	786	15.1	28,622	569	52	3	17	32	38	4
Pope	385	38.5	11,215	1,121	10	..	6	8	2	2
Pulaski	190	8.6	16,450	747	22	..	10	15	12	1
Putnam	173	19.2	9,615	1,068	9	..	5	7	5	1
Randolph	587	14.0	29,935	712	42	..	19	27	21	1
Richland	357	14.9	15,970	665	24	1	12	17	7	2
Rock Island	424	3.4	81,466	662	123	9	62	89	78	17
[6]St. Clair	663	3.8	144,092	837	172	6	84	116	95	15
Saline	399	6.0	36,422	551	66	1	28	42	27	7
[7]Sangamon	876	4.7	105,206	562	187	4	98	140	121	30

1. Includes Quincy, population 36,764; physicians 71 [M.R.C. 6].
2. Includes Chicago, population 2,447,034; physicians 5,301 [M.R.C. 808].
3. Includes Aurora, population 33,613; physicians 69 [M.R.C. 8].
4. Includes Decatur, population 38,526; physicians 84 [M.R.C. 12].
5. Includes Peoria, population 70,732; physicians 170 [M.R.C. 21].
6. Includes East St. Louis, population 72,105; physicians 91 [M.R.C. 10].
7. Includes Springfield, population 59,468; physicians 137 [M.R.C. 26].

ILLINOIS—continued

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Schuyler.......	432	20.6	14,852	707	21	1	8	14	9	1
Scott..........	249	19.1	10,067	774	13	..	5	7	10	..
Shelby.........	772	16.4	31,693	674	47	..	18	32	18	5
Stark..........	290	12.6	10,098	439	23	2	7	16	12	5
Stephenson....	559	8.5	38,198	578	66	4	26	40	46	7
Tazewell.......	647	13.2	34,614	706	49	2	12	32	33	3
Union..........	403	8.9	21,856	485	45	1	10	28	25	5
[8]Vermilion......	921	6.1	87,018	568	153	1	65	109	98	18
Wabash.......	220	10.5	16,613	791	21	..	11	15	14	3
Warren........	546	14.0	23,431	600	39	1	14	27	25	3
Washington...	561	20.0	18,759	669	28	..	10	17	16	2
Wayne.........	733	23.6	25,697	828	31	1	13	19	20	1
White..........	507	12.4	23,052	562	41	1	8	19	19	4
Whiteside......	679	12.3	34,507	627	55	2	25	38	33	5
[9]Will............	844	8.1	91,383	878	104	4	51	79	51	9
Williamson....	449	7.3	57,727	916	63	..	26	44	36	12
[10]Winnebago....	529	4.5	74,326	629	118	4	55	89	80	12
Woodford.....	528	22.0	20,503	854	24	..	14	17	21	3
Totals.......	56,043	5.1	6,265,789	574	10,909	596	5,530	8,151	6,213	1,533

8. Includes Danvill [illegible] physicians 82 [M.R.C. 11].
9. Includes Joliet, [illegible] ysicians 67 [M.R.C. 6].
10. Includes Rockfo [illegible] : physicians 103 [M.R.C. 9].

HONOR ROLL

Adams County

CLAYTON—Elvin Otis Brown. LIBERTY—William Elmer Mercer. LORAINE—Ralph Edgar Potter. MENDON—Adelbert M. Austin.

QUINCY—John William Earel; Robert William Eaton; Thomas Blackburn Knox; Frank Russell Morgan; Walter Davis Stevenson; George C. Stimpson.

Alexander County

CAIRO—William Sidney Brown; Charles L. Weber. McCLURE—Clyde Earl Duncan.

Bond County

GREENVILLE—William Lee Hall. OLD RIPLEY—Charles Hunt Powell.

Boone County

BELVIDERE—Alden Alguire; Wallace A. Belsey.

Bureau County

ARLINGTON—Grant Brayton Bushee. BUDA—John Fletcher Taylor. [illegible] Toothaker. LA MOILLE—William Henry Creede. [illegible] Josephus Flint. SPRING VALLEY—Morris Finkel- [illegible]y Virl Forney. WYANET—Richard Herrick.

Calhoun County

BACHTOWN—Frederick William Fiedler. KAMPSVILLE—Zoda D. Lumley.

Carroll County

MT. CARROLL—Samuel Phillip Colehour Jr. SAVANNA—Joseph Benjamin Schreiter.

Cass County

BEARDSTOWN—Roy Henry Garm; *Frank Oliver Kunz*; Walter Spalding Mix.

Champaign County

CHAMPAIGN—Frank A. Beardsley; John C. [illegible] James Hugh Finch; John Neal Hoffmann; Harry Cullen [illegible] McKinney; Earl DeWitt Wise. *HOMER—Joseph* [illegible] lin Tate. PENFIELD—Clifford Charles W[illegible] Francis Hilgenberg. URBANA—Clyde Deene Gulick.

Christian County

[illegible] Miller. OWANECO—George Anderson Tankers- [illegible] Pickrell Simpson. PANA—Albert Lee Alderson. [illegible] Beck Herdman; Dwight Franz Morton.

Clark County

CASEY—Owen Clark Foster. [illegible] Campbell Bradley; Percy Parker Haslitt; Roscoe [illegible]mes John Rose. *MARSHALL—Hubert Morton English.*

Clay County

LOUISVILLE—John Vardeman Dillman.

Clinton County

CARLYLE—John Quince Roane; William Oscar Warren. KEYESPORT—John Logan McAlister. NEW BADEN—Benjamin Casper Clifford Schnell. SHATTUC—*Orvil O'Neal.*

Coles County

CHARLESTON—Walter Clinton Bisson; John Franklin Henderson; Gerry Brown Dudley. HUMBOLT—*Frank Herbert Deane.* MATTOON—Rufus James Coultas; Ralph Edward Kleckner; Bruce Downing Parrish.

Cook County

BARRINGTON—Carl V. Arthur Weichelt. BLUE ISLAND—William [illegible] bert James.

[illegible] Putnam Abbott; Charles Adams; Russell E. Adkins; [illegible] tadt; Charles Burton Alexander; Laurie Lee Allen; Thomas Dyer Allen, Thomas Grant Allen; Walter H. Allport; George C. Amerson; August Anderson; Frank Arthur Anderson; George Herman Anderson; Leland Hurd Anderson; Frank Taylor Andrews; Harry Samuel Arkin; Benedict Aron; George Howard Artz; Harvey Combs Asher; John Paul Ash[illegible]th; Reuben Jay Atwood; Samuel Axebrad.

Alfred Stanion-Bailey, [illegible]esse O. Bailiff; Hillier L. Baker; H. Baranick; Carl L. Barnes; Alexander H. Barnett; Edwin Judge Barnett; Irving F. Barnett; Channing W. Barr[illegible]t; William Fred Bartelt; Eric Kline Bartholomew; Herman Harry B[illegible]sler; Hyman William Bau; August H. Bauer; William L. Baum; Ph[illegible]ip M. Bedessen; Bernard Benkendorf; John Milton Berger; Robert S. [illegible]rghoff; Clifford Edward Bergin; Joseph Soldye Berkowitz; William Frank[illegible] Bernart; Harry Bernard Bernhardt; Frederic Atwood Besley; Ralph Boerne Bettman; Tom Finley Beveridge; Stephen Biezis; Frank Billings; Rufus W. Bishop; Paul Black; Paul Morse Blackburn; Edward S. Blaine; Gustavos M. Blech; Henry Steven Bleese; Walter Lawrence Blomgren; *James Henry Bloomfield*; Bernard Joseph Bolka; Jesse F. Boone; Clarence Henry Boren; Walter Elmer Bourque; George Douglas Brand; Sylvester Alonzo Brenza; Gilbert E. Brereton; Harry D. Brickley; *Arthur Shaw Bristow*; Leon George Brackeet; Lewis Wine Bremerman; *James Andrew Britton*; Louis L. Brodsky; Charles B. Bromberg; Overton Brooks; Thomas C. Brooks; John Thomas Brosnan; Aubrey K. Brown; Frederick Irvine Brown; Ralph Crissman Brown; Sanger Brown; Frank Earle Browning; Edward Arthur Brucker; Edmund G. Brust; *Edward Buckman*; George Enos Burdick; Alexander Walter Burke; Alexander William Burke; Charles Augustus Burkholder; William J. Butler; Theodore Fred Butzow; Arthur Frederic Byfield; Maurice William Kirby Byrne.

Archie Byron Calvin; Thomas D. Cantwell; Joseph Almarin Capps; Francis Vincent Carberry; Hayes William Carlin; Herbert Chapman Carothers; Ralph Waldo Carpenter; Thomas Albert Carter; Emor L. Cartwright; Eugene Cary; Frank Cary; French S. Cary; Charles Prowse Chaflin; Earl R. Chamness; Harrison Gerald Champlin; *Frank A. Chapman*; Eugene Joseph Chesrow; Joseph Paul Chiasson; Clarence Robert Chouinard; Henry Christiansen; Edward Albert Christofferson; Olaf Herman Christoffersen; Frank Spooner Churchill; Eugene G. Clancy; Carl Wesley Clark; *Elbert Clark; Floyd Marion Clark; Peter S. Clark*; William Arthur Clark; Festus Claybon; Blaine Wilson Claypool; Charles F. Clayton; Herman C. Clayton; Joseph Patrick Cleary; Oscar Cleff; Loyd Brandon Clinton; Hiram Bryan Cloud; Ralph Benjamin Cobb; Michael Milton Cody; Mayer S. Coffler; Mandel A. Isaac Cohen; Lazarus Cohler; Charles W. Colebaugh; James Patrick Collins; Lorin Cone Collins; Sidney Beeson Conger; Arthur Charles Conrad; George Asbury Conrey; Francis James Conroy; Bernard P. Conway; Homer Percival Cooper; Norman Copeland; Edward Augustine Corcoran; John Webster Cornell; Franklin Joseph Corper; Charles A. Costello; Thomas Cottrell; Roy H. Cox; Alexander Righter Craig; Thomas Stanley Crowe; William Robert Cubbins; Carey Culbertson; Malcolm Cunningham; Louis T. Curry; Arthur Hale Curtis; William Cuthbertson; Irwin Herbert Cutler; Lloyd David Cutting; Leo Matthew Czaja.

Thomas L. Dagg; Elmer Olaf Dahl; George Lawrence Alfred Dale; Leon Eugene Dallwig; John Earle Damron; John Dryden Davenport; Vernon C. David; Ray H. Davies; Raymond Evan Davies; Carl Henry Davis; George Gilbert Davis; *Nathan Smith Davis III; Frank Deacon*; Calvin Morgan De Beck; William De Boer; James T. Degan; Edward Vincent Del Beccaro; Abraham Lincoln Desser; George Frederick Dick; Spencer Cornelius Dickerson; Frank Santo Di Cosola; Victor Peter Diederich; Andrew Jackson Dinsmore; Phillip Schuyler Donane; John Milton Dodson; Edmond James Doering; Maurice Doktorsky; John Edward Dolan; Edward Frank Dombrowski; Harry J. Dooley; William A. N. Dorland; Alexander Aloysius Drill; Emilius C. Dudley; Frank Thomas Duffy; Royal Wade Dunham; Harry Coleman Dunlavy; Harry Joseph Dwyer.

Frank B. Earle; Lewis Kent Eastman; Roscoe Conklin Eaton; Tally John Echerer; Charles Patt Eck; John William Eckstein; Samuel Martin Edison; Alfred Theodore Eide; Daniel Nathan Eisendrath; Joseph Eisenstaedt; Charles D. Eldred; William Tupper Elliott; Raymond Frank Elmer; Lynn W. Elston; John F. England; Samuel S. Epstein; John Eterno; Arthur Morgan Evans; John Henry Evans.

Emanuel Montague Fainer; George Franklin Farman; Patricinne J. H. Farrell; John Favill; Roy Ralph Ferguson; James Henry Field; Ephraim K. Findlay; Thomas Francis Finegan; Victor Finsand; Anton John Firtik; Morris Fishbein; Eric Franklin Fisher; Frederick Alfred Fisher; Hart Ellis Fisher; William Burnham Fisk; Robert Emmett Flannery; Samuel Clifton Fleming; Clarence Wallace Flint; James Lennon Foley; Thomas P. Foley; Max Lyon Folk; Alexander William Fordyce; Claude R. G. Forrester; Earle Bloodgood Fowler; Edson Brady Fowler; Charles Moses Fox; Edward Francis Fox; John Sebastian Fox; *Frank Fred Fraider*; Chetwynd Mair Franchere; Frank Doig Francis; Jacob Frank; F. O. Frederickson; Horatio Putnam Freemen; Carl Freund; Stanton Abeles Friedberg; Joseph Friedman; Isaac Jacob Frisch; Horace B. Frost; John Garfield Frost; *Kendall Phelps Frost*; Herbert H. Frothingham; William Fuller; Neil Eugene Funk.

Fred William Gaarde; Michael Archangle Galgano; Michael L. Gallagher; William J. Garard; Herbert Thomas Garrison; Wesley Emmet Gatewood Jr.; Harry Gauss; Robert J. Gay; *John Joseph Gearin; Maurice F. Geehan*; William Henry Gehl; Arthur Henry Geiger; Raymond Horace George; Jesse Robert Gerstley; Willis Stanley Gibson; John Gervase Goggin; Julian Jerry Golemblowski; Maurice Louis Goodkind; *Jacob Abraham Goodman; James K. Gordon; Harry Searle Gradle*; Evarts Ambrose Graham; John Francis Grant; Grant Judson Gray; Jesse Trott Grayston; Frederick Robin Green; Thomas Stephen Green; Philip B. Greenburg; Richard Frederick Greening; Louis Alexander Greensfelder; Robert Scott Gregg; Patrick Joseph Griffin; Evan Henry Montgomery Griffiths Jr.; George (Duro) Gúca; Nordahl Osmund Gunderson; Spencer DeWitt Guy.

Millard Wilson Hall; Ernest K. Hallock; Albert Edward Halstead; Walter Wile Hamburger; James Lloyd Hammond; Reuben Caldwell Hanchett; Arthur R. Hansen; Oscar Amadeus Hansen; Theodore Lorentz Hansen; Oliver Cromwell Hargreaves; Carleton A. Harkness; LeRoy Harold Harner; Roy W. Harrell; Charles Francis Harris; Urban Bunyon Harris; Jacob R. Harry; *Perry Vernon Hartman*; Basil Coleman Hyatt Harvey; James Alexander Harvey; Arthur Henry Hauber; Lorens Aden Haug; Austin Albert Hayden; Daniel Bernard Hayden; Daniel Francis Hayes; Francis Todd H'Doublar; William Andrew Heap; Daniel J. *Hayes; Harry Malcome Hedge; Gordon* Egan Hein; Alvin George Helwig; Robert Houston Henderson; Karl Johan Henricksen; William John Henry; Carl Bernhard Herrmann; William Eugene Hervey; Julius Hays Hess; Clarence J. Hicks Jr.; William J. Hickson; John Higginson; David S. *Hillis; Edwin Frederick* Hirsch; Edwin Walter Hirsch; J. C. Hoag; Julius Henry Hoelscher; Harry Richard Hoffman; Leo George *Hogan*; Thomas Aldhelm Hogan; Edmond Arthur Holberg; Alvin Ambrose Holden; William Henry Holmes; Lewis Andrew Hopkins; Percy Earl Hopkins; David Alfred Horner; John Allan Hornsby; William Henry Howard; William Welles Hoyt; Timothy Stephen *Huggard; Albert Herman* Hundermark; James Edward Hunter; Sherman Rogers Hurlbut; Clayton James Hyslop.

Ernest Edward Irons; Harry Theobus Isacowitz; William Israelson.

A. Dudley Jackson; Clarence Augustus Jacobson; Guy Herbert Jacobson; Vernon Meadows Jared; Joseph Francis Jaros; Martin Bushnell Jelliffe; Edward Lealand Jenkinson; Frank Joseph Jirka; Edward William Johannes; Henry C. Johannes; Carl John Johannesson; Anderson R. T. Johnson; Russell Martin Johnson; Joseph Andrew Johnston; Louis Campbell Johnston; Alfred Edward Jones; *Harold Eldred Jones*; Yngve Joranson.

Joseph Charles Kaczkowski; Frank S. Kadlec; Jacob V. Kahn; Allen B. Kanavel; Robert Emmett Keating; Harry Katz; David Henry Keller; John Edward Kelly; James William Kelly; Joseph Aloysius Kelly; Raymond Martin Kelly; George Allen Kelso; James Arthur Kennedy; Raymond Brandt Kepner; Ellis K. Kerr; Albert Belcham Keyes; Charles Samuel Kibler; W. Ivan King; Robert Roscoe Kirkpatrick; Robert William Kispert; Peter Gad Kitterman; Henry Herman Kleinpell; Robert Frederick Knoll; Herman Carl Koch; Summer L. S. Koch; Irvin S. Koll; George John Korby; Mieeislaus Jerome Kostrzewski; Constantine John Koursounis; Leon Paul Kosakiewics; Sigurd Herbert Kraft; Jacob Carl Kraft; John Charles Matthew Krasa; Otto Anthony Kreml; Guy Edward Krollck; Gerard Nichols Krost; Carl Emil Krugmeier; Henry Kruse; Stephen Francis Kubala; Charles Soncik Kubik; Ralph Henry Kuhns; Max Mandel Kulvinsky.

Elzear La Mothe; Henry George Lamp; Max Lampert; George Milton Landau; Maxwell Lando; Francis Lane; Henry William Lang; Earl Kemmer Langford; Harvey Louis Langlois; Lorenzo Brown Lapsley; Cyril James Larkin; William Raphael Larkin; Milton Jay Latimer; John M. Lavin; James F. Lawson; Thomas Maurice Leahy; Joseph Joessel Lebovitz; William George Lee; Cornelius A. Leenheer; Clarence Wilbur Leigh; Samuel Brody Leiser; Henry George Lescher; Daniel Harold Levinthal; Nathan David Leviton; Phillip Lewin; Dean DeWitt Lewis; Henry F. Lewis; Karl Lewis; Leonard W. Lewis; Leland Stanford Light; Ottis Like; Charles Elder Lindsay; Claude Allen Link; Anthony Joseph Linowiecki; Lewis Hertz Lippman; George U. Lipshulch; Harvey Thomas Little; Wilbur Grant Little; Gilbert Martin Loewe; William Hoffman Gardner Logan; Otto Lohman; Lester Lemuel Long; Vernon L. Looney; LeCount Rochambeau Lovellette; Charles Hubart Lovewell; Frank Smith Lower; Nelson Horatio Lowry Jr.; John Harry Luczak; August H. Lueders; Gottlieb Adolph Lurie; Frank Benedict Lusk; Andrew J. Lyons.

Melbourne Mabee; William Patterson MacCracken; Edward Joseph Macdonald; Cleveland Charles MacLane; Samuel W. Maclin; Ira Joseph Magee; Paul Budd Magnuson; Russell Burton Main; Harrison W. Maltby; Milton Mandel; Samuel Morris Marcus; David Edmond Markson; Lawrence Matthew Marley; Hartley Farnham Mars; Albert Martin; Franklin H. Martin; Harry Gilbert Martin; Leon Wade Martin; George Shrader Mathers; Laurence H. Mayers; Lewis Linn McArthur; Selin Walker McArthur; Ralph Rowland McCarthy; William Bernard McCauley; Thomas Scott McClanahan; John Hancock McClellan; George Wilford McCrary; John Joseph McDermott; Duncan Brown McEachern; Albert Edwin McEvers; Wilmer Delavergne McGrath; John Edward McGuiggan; John W. McGuire; Michael Francis McGuire; Wm. Aloysius McGuire; C. Hugh McKenna; James Joseph McKinley; Ira McKinney; Guy Marshall McLean; James Eugene McMeel; Raymond W. McNealey; Arthur Francis McQuaid; Albert Babtiste McQuillan; Max Louis Mendel; Frederick Menge; Llewellyn Merrill; Frank Waldo Merritt; Arthur Ray Metz; Jacob Meyer; Karl Albert Meyer; Edw. Frank Mielke; Earl Bert Miller; Edwin M. Miller; Fred E. Miller; Fred M. Miller; Geo. Henry Miller; Joseph Leggett Miller; Theodore Earl Miller; Max Jacob Minker; John Milton Mitchell; Bronislaus John Mix; Charles L. Mix; Harland Edgar Mize; Frank Mock; Harry Edgar Mock; Frederick William Moeller; Walter Carl Mohr; Charles Louis Mohr; Albert H. Montgomery; Adelbert Montague Moody; Beveridge Harshaw Moore; John Harris Moore; Manuel Garrido Morales; Edw. A. Morris; Ashley Baker Morrill; Nelson Case Morrow; Edward Campbell Morton; Samuel Mordecai Morwitz; George Warner Mosher; Eli B. Moss; Ellis Van Order Moulton; George H. Musselman.

Walter Herman Nadler; William Davison Napheys Jr.; William Daniel Napiantek; Vivian John Neale; Ole S. Neseth; Leon Newman; Roscoe Max Nicholson; Samuel Daniel Nixon; William L. Noble; Harry Sims Norton; Frank John Novak Jr.; Benjamin Newton Novy; Payson L. Nusbaum.

John Francis Oates Jr.; Albert John Ochner; John C. O'Connell; John Thomas O'Connell Jr.; Thomas Philip O'Connor; Arthur White Ogden; Claude Harris Ogden; Leonard B. E. Oliver; Paul Oliver; John Gabriel O'Malley; Thomas J. O'Malley; John Hoff Opitz; Harry D. Orr; John William O'Shea.

Rollo Kirk Packard; Charles Evart Paddock; Lester J. Palmer; Bennett Rowland Parker; Charles Herbert Parkes; Jacob Paskind; Dorsey E. Payne; Meyer Samuel Pedott; John Pellettieri; Clyde Dale Pence; John Rawson Pennington; Nelson Mortimer Percy; Irving Perrill; Howard Samuel Perry; Chester Moore Peters; Ralph Waldo Petersen; Harry Michael Peterson; Peter Gustav Peterson; Dallas B. Phemister; Frank Marion Phifer; Roland Hodge Phillips; William Joseph Pickett; Norval Harvey Pierce; Thaddeus S. Pierzynski; Louis William Pijan; Isadore Pilot; Maurice Charles Pincuffs; Charles Irwin Pitte; Samuel C. Plummer; Louis John Pollock; Paul Griffith Pomeroy; Darwin Brayton Pond; Irving Angel Porges; Hans A. Poulsen; George Nathaniel Pratt; Roscoe Wellington Pratt; Robert Bruce Preble; James Frederick Presnell; Louis Jacob Pritzker; Ambler Caskie Pruner; William Allen Pusey.

Wm. Joseph Quigley; Frank John Quirk.

Maurice J. Rabbins; Harold Alfred Ramser; Thomas Pollock Ranney; Henry A. Rasmussen; Edward Harold Rategan; Thomas Harold Reagan; Torrance Reed; Walter Kellog Reed; Chas. Henry Reinhardt; Herman Reinsch; Sheppard Remington; Chas. Curtis Rentfro; Frederick Talmage Rice; William Peter Rice; John Ridlon; Frederick Jackson Riley; Wm. Joseph Riley; George J. Rivard Jr.; Harry Robenstein; Charles M. Robertson; Thomas J. Robeson; Edward Tracy Robinson; Russell Dean Robinson; John A. Robinson; Lawrence Howard Roblee; Leonard Field Roblee; Alexander Sands Rochester; Roy Thomas Rodaway; Buell S. Rogers; Daniel Weston Rogers; Harry Chas. Rolnick; Edmond Carl Roos; Louis Rose; Harold Alvin Rosenbaum; Lambert William Rosenbaum; Sol Rosenblatt; Philip S. Rosenblum; Max Rosentiel; Vergil Alvin Ross; David B. Rotman; Joseph E. Rowan; Paul Hoyland Rowe; Carlton L. Rowell; Maurice Rubel; George Rubin; Louis Rudolph; William Hall Rupert; Wm. Rupp; Eugene Alphonsus Rush; Albert Freeman Ryan; Carl Gustaf Rydin; Edwin Warner Ryerson.

Walter L. Sachtleben; Robert Salem Salk; Charles F. Sanborn; Abel P. M. Sandahl; Geo. Edward Sanders; Frank Joseph Schick; Oswald F. Schiffli; Emil Arnold Schlageter; Erwin Rudolph Schmidt; Carl Henry Schnaer; Sydney Sigsfried Schocet; Charles Joseph Schoenfeld; Charles Schott; Otto Julius Schott; Frank E. Schram; George Henry Schroeder; Herman C. Schumm; Stephen Andrew Schuster; Fred F. Schwartz; Sylvio A. Sciarretta; Orlando Frank Scott; Francis Joseph Scully; Leon Steidler; Robt. Arnot Sempill; Francis Eugene Senear; Walter Scott Siewerth; William Joseph Siegler; Clarence Edward Sidwell; Edward Gerald Sepple; Emanuel John Senn; Harry Sered; John Louis Sercik; Henry Shacoff; Morris Siegel; Warren P. Sights; Dwight C. Sigworth; Willis Irving Silverstein; George Henry Simmons; Fredk. William Slobe; Arthur Atwell Small; Charles Porter Small; James Craig Small; Clarence Earl Smart; Edgar Allen Smith; Fred M. Smith; Lester Alvin Smith; Geo. Oliver Solem; Harry Samuel Solomon; Kellogg Speed; Henry Albert Stalb; Nicholas Cornelius Stam; Mont Voet Stanley; John Earl Stanton; Samuel Cecil Stanton; Daniel A. K. Steele; Pierre Abel Steele; Samuel Stein; Andrew V. Stephenson; Robert Becket Stephenson; Jacob Stern; Charles A. Stevens; Randolph O. Stites; Frank Lee Stone; Claire Leroy Straith; Walter L. Stranberg; Herbert Willis Strass; David C. Straus; Jerome Frank Strauss; Sidney Strauss; Edward Jones Strickler; Charles Klaus Stulik; William Harold Stutsman; George F. Suker; Ralph Chas. Sullivan; Samuel Sullivan; Thomas J. Sullivan; Walter J. Sullivan; Charles Joseph Swan; Harold Swanberg; Harry Theodore Swanson; John Steele Sweeney; Winfield Carey Sweet; William J. Swift; Bion Claude Syverson.

Edwin Robert Talbot; George Calvin Tallerday Jr.; George Tarnowsky; William Henry Taylor; Adolph Maurice Teixler; Rudolph Gabriel Tenerowicz; Frederick Cleveland Test; Louis Thexton; William John Thompson; William M. Thompson; Harvey David Thornburg; John Norton Thorpe; Robert Tigay; David Duke Todd; Adolph Dahl Tollefsen; Gerhard John Torell; Richard Torpin; Paul Scoville Traxler; Sidney Newton Trockey; Edward Patrick Troy; Francis E. Turgasen; Luther Lloyd Turner; Henry Irving Twiss.

Henry Johnson Ullman; Leon Unger; Oliver Edmund Van Alyea.

Harry Eugene Vander Bogart; Albert Vander Kloot; John Francis Von Paing; Robt. Throop Vaughan; Page T. Vaughan; Arthur Nathaniel Vaughan; Karl L. Vehe; Walter Verity; Italo Volini; Walter Franz von Zelinske.

Guy R. Walker; Herbert Walker; Sydney Walker; Frank Xavier Walls; John H. Walls; Arthur Mansfield Washburn; Willard H. Waterous; Henry Joseph Way; John Lester Webb; Anthony Thos. Weber; Ralph W. Webster; Anders Johann Welgen; Paul B. Welch; Frank Monroe Weldy; Edward Franklin Wells; Alfred Carl Wendt; Arthur William Wermuth; Henry Oscar Wernicke; Allen A. Wesley; John Frank West; Daniel George Weymouth; Clarence Loyd Wheaton; Warren Overton Wheelock; James R. White; Wm Richard Whitley; Theodore Martin Wiersen; Milton Arthur Wiese; William H. Wilder; Chas. Raymond Wiley; William Champness Williams; Charles Spencer Williamson; Ralph G. Willy; Jacob Wilford Wine; Walter Fritz Winholt; John Paul Woitalewicz; Harry D. Wolff; Casey A. Wood; Herbert Booth Woodward; George William Woodnick; Thomas A. Woodruff; Rollin Turner Woodyatt; William Henry Woolston; Eugene Pierson Wright; Bert Isadore Wyatt; Hulett Judson Wyckoff.

Geo. Frederick Yates; Frank Walls Young; Chas. Benj. Younger; Norman Zolla

CHICAGO—John Martin Axelson; John Willey DeVry; Chris Eugene Emery Gatewood, Mark Allen Gier; Vincent Gino; Russell Dorr Herrold; David Holden; Gustave Walfrid Lawson; Frederick Douglass Mazon; Francis Daniel McNertney; Golder Lewis McWhorter; Joseph Moles; William Kline Murray; Brooks, Jesse Musselwhite; Yorge John Nyvall; Clifford Spencer Powell; Thomas Hubert Renn; Sidney Mitchell Roberts, Ira Boyd Robertson; John Slivka; Harry Stack Sullivan; George Lyle Venable; Charles Downes Wilkins.

CHICAGO HEIGHTS—George William Cusick. CICERO—Anthony H. Bennewitz; Frank Joseph Kotalik; Florian George Ostrowski; Louis Savitsky; Charles Joseph Tierney. EVANSTON—William Graham Alexander; Stephen V. Balderston; Frederick Christopher; Eugene William Fiske; Hugh M. Fogo; Joseph Lawrence Hagan; Placido R. V. Hommel; Benjamin Harrison Huggins; Albert H. Roler. GLENCOE—Fred Pascoe Patton; Frank Reinsch; Harry Dunlap Wiley. HARVEY—Irving William Steiner.

HOMEWOOD—George William Scupham; James F. Wharton. HUBBARD WOODS—Frank Chatfield Farmer. LA GRANGE—Raymond Edward Hillmer. MELROSE PARK—William Fred Scott; George Curtis Shockey; Roy Davis Short. MT. GREENWOOD—Robert Cornelius Murphy. OAK FOREST—Arthur S. Campbell; Taylor Wilson Funkhouser; Samuel H. Richman; Oliver Rufus Spalding; John W. Turner. OAK PARK—Arthur K. Baldwin; Carl Herman Bartling; Burton Wayne Bivings; Clarence Edward Frybarger; Clarence Pinkney Harris; Wm. Chas. Meacham; Arthur Kern Spiering; John Wesley Tope; Chester Warren Trowbridge; Herbert G. Vaughan. PARK RIDGE—John Ogden Gaston. RIVERSIDE—Marcus Hatfield Hobart. WILMETTE—Bernard Montrose Conley; Herbert V. Mellinger. WINNETKA—Frank Wickes Blatchford; Edw. Michael Mikkelsen.

MELROSE PARK—Oliver Morton Holliday.

Crawford County

FLAT ROCK—Luther Byrl Highsmith. OBLONG—Clyde Schiverin Wilson. PALESTINE—Robert Bruce Patterson. ROBINSON—Alan Goodwin Brooks; Charles Ludvey Davis; Ausby Lyman Lowe.

Cumberland County

GREENUP—Joseph C. Brookhart. TOLEDO—William Lester Smith.

DeKalb County

DEKALB—John Patrick Kane. SYCAMORE—Fred Harrison Bell.

DeWitt County

CLINTON—Warren E. Bradbury; Chas W. Carter; Edwin Ralph May; Arthur Edwin Shell; Samuel L. Thorpe. DEWITT—Henry Kent Hooker. WELDON—Clarence W. Chapin.

Douglas County

ARTHUR—Charles W. Monroe. CAMARGO—Benjamin Franklin Zobrist. HINDSBORO—John James Hopkins. NEWMAN—Raymond C. Gillogly; Clinton Daniel Swickard; James Andrew Valentine. VILLA GROVE—Phillip Herrin.

DuPage County

DOWNERS GROVE—Walter Schuck Bebb; Knud Hartnack; Mauriece Lyon Puffer; Edwin Raymond Strong. HINSDALE—Ernst Herman Hoffman. LOMBARD—William Christopher Schiele. NAPERVILLE—Walter Scott Conn; Winfred Byrum Martin; Herman Patterson. WEST CHICAGO Harry Winfield Kinne. WHEATON—Arthur Blanchard Connor; Thomas Oliver Greig.

Edgar County

CHRISMAN—Charles LaFayette Kerrick. HUME—Colin Kenneth Ross. METCALF—Hugh Irving Conn. OLIVER—John Wesley Martin. PARIS—Thomas C. McCord; Frank Edmund Shipman; Daniel Webster Young. SCOTLAND—James Frank Jennings.

Edwards County

WEST SALEM—Herman Christian Tietze; Timothy Charles Weber.

Effingham County

DEITERICH—John William Dunn. EFFINGHAM—Charles Frederick Burkhardt. MASON—James Thomas Breakey.

Fayette County

ST. ELMO—Wm. Jay Whiteport. ST. PETER—Fredk. Hyder Yates. VANDALIA—Mark Greer.

Ford County

PAXTON—Ira D. Kelsheimer.

ILLINOIS—continued

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Schuyler	432	20.6	14,852	707	21	1	8	14	9	1
Scott	249	19.1	10,067	774	13	..	5	7	10	..
Shelby	772	16.4	31,693	674	47	..	18	32	18	5
Stark	290	12.6	10,098	439	23	2	7	16	12	5
Stephenson	559	8.5	38,198	578	66	4	26	40	46	7
Tazewell	647	13.2	34,614	706	49	2	12	32	33	3
Union	403	8.9	21,856	485	45	1	10	28	25	5
[8]Vermilion	921	6.1	87,018	568	153	1	65	109	98	18
Wabash	220	10.5	16,613	791	21	..	11	15	14	3
Warren	546	14.0	23,431	600	39	1	14	27	25	3
Washington	561	20.0	18,759	669	28	..	10	17	16	2
Wayne	733	23.6	25,697	828	31	1	13	19	20	1
White	507	12.4	23,052	562	41	1	8	19	19	4
Whiteside	679	12.3	34,507	627	55	2	25	38	33	5
[9]Will	844	8.1	91,383	878	104	4	51	79	51	9
Williamson	449	7.3	57,727	916	63	..	26	44	36	12
[10]Winnebago	529	4.5	74,326	629	118	4	55	89	80	12
Woodford	528	22.0	20,503	854	24	..	14	17	21	3
Totals	56,043	5.1	6,265,789	574	10,909	596	5,530	8,151	6,213	1,533

8. Includes Danvill [illegible] *physicians 82 [M.R.C. 11].*
9. Includes Joliet, [illegible] *ysicians 67 [M.R.C. 6].*
10. Includes Rockfo[illegible] *physicians 103 [M.R.C. 9].*

HONOR ROLL

Adams County

CLAYTON—Elvin Otis Brown. LIBERTY—William Elmer Mercer. LORAINE—Ralph Edgar Potter. MENDON—Adelbert M. Austin.

QUINCY—John William Earel; Robert William Eaton; Thomas Blackburn Knox; Frank Russell Morgan; Walter Davis Stevenson; George C. Stimpson.

Alexander County

CAIRO—William Sidney Brown; Charles L. Weber. McCLURE—Clyde Earl Duncan.

Bond County

GREENVILLE—William *Lee Hall. OLD RIPLEY—Charles Hunt Powell.*

Boone County

BELVIDERE—*Alden Alguire;* Wallace A. Belsey.

Bureau County

ARLINGTON—Grant Brayton Bushee. BUDA—John Fletcher Taylor. LADD—*Joel Edwin Toothaker. LA MOILLE—William* Henry Creede. PRINCETON—Oliver Josephus Flint. SPRING VALLEY—Morris Finkelberg. WALNUT—*Guy Virl Forney. WYANET—Richard Herrick.*

Calhoun County

BACHTOWN—Frederick William Fiedler. KAMPSVILLE—Zoda D. Lumley.

Carroll County

MT. CARROLL—Samuel Phillip Colehour Jr. SAVANNA—Joseph Benjamin Schreiter.

Cass County

BEARDSTOWN—Roy Henry Garm; Frank Oliver Kunz; Walter Spalding Mix.

Champaign County

CHAMPAIGN—Frank A. Beardsley; *John C. Dallenbach;* James Hugh Finch; John Neal Hoffmann; Harry Cullen Kariher; Clarence David McKinney; Earl DeWitt Wise. [illegible] [illegible]yshaw; Elsa Franklin Tate. PENFIELD—Cliffor[illegible] PESOTUM—James Francis Hilgenberg. URBANA—[illegible]

Christian County

KINCAID—Richard J. Miller. OWANECO—George Anderson Tankersley. PALMER—Jesse Pickrell Simpson. PANA—Albert Lee Alderson. TAYLORVILLE—Samuel Beck Herdman; Dwight Franz Morton.

Clark County

CASEY—Owen Clark Foster. [illegible] Campbell Bradley; Percy Parker Haslitt; Roscoe [illegible] [illegible]mes John Rose.

MARSHALL—Hubert Morton English.

Clay County

LOUISVILLE—John Vardeman Dillman.

Clinton County

CARLYLE—John Quince Roane; William Oscar Warren. KEYESPORT—John Logan McAlister. NEW BADEN—Benjamin *Casper Clifford* Schnell. SHATTUC—Orvil O'Neal.

Coles County

CHARLESTON—Walter Clinton Bisson; John Franklin Henderson; Gerry Brown Dudley. *HUMBOLT—Frank Herbert Deane.* MATTOON—Rufus James Coultas; Ralph Edward Kleckner; Bruce Downing Parrish.

Cook County

BARRINGTON—Carl V. Arthur Weichelt. BLUE ISLAND—William Holland Byford; Robert James.

CHICAGO—Donald Putnam Abbott; Charles Adams; Russell E. Adkins; Eseck Albert Aisenstadt; Charles Burton Alexander; Laurie Lee Allen; Thomas Dyer Allen; Thomas Grant Allen; Walter H. Allport; George C. Amerson; August Anderson; Frank Arthur Anderson; George Herman Anderson; Leland Hurd Anderson; Frank Taylor Andrews; Harry Samuel Arkin; Benedict Aron; George Howard Artz; Harvey Combs Asher; John Paul Ash[illegible]th; Reuben Jay Atwood; Samuel *Axebrad.* Alfred Stanion Bailey, [illegible]sse O. Bailiff; Hillier L. Baker; H. Baranick; Carl L. Barnes; Alexander [illegible] Barnett; Edwin Judge Barnett; Irving F. Barnett; Channing W. Barr[illegible]; William Fred Bartelt; Eric Kline Bartholomew; Herman Harry B[illegible]ler; Hyman William Bau; August H. Bauer; William L. Baum; Ph[illegible]p M. Bedessen; Bernard Benkendorf; John Milton Berger; Robert S. [illegible]hoff; Clifford Edward Bergin; Joseph Soldye Berkowitz; William Frank [illegible]Bernart; Harry Bernard Bernhardt; Frederic Atwood Besley; Ralph Boerne Bettman; Tom Finley Bereridge; Stephen Biezis; Frank Billings; Rufus W. Bishop; Paul Black; Paul Morse Blackburn; Edward S. Blaine; Gustavos M. Blech; Henry Steven Bleese; Walter Lawrence Blomgren; James Henry *Bloomfield; Bernard* Joseph Bolka; Jesse F. Boone; Clarence Henry Boren; Walter Elmer Bourque; George *Douglas Brand; Sylvester Alonzo Breaza;* Gilbert E. Brereton; Harry D. Brickley; Arthur Shaw Bristow; Leon George Brackeet; Lewis Wine *Bremerman; James Andrew Britton;* Louis L. Brodsky; Charles B. Bromberg; Overton Brooks; Thomas C. Brooks; *John Thomas Brosnan; Aubrey K. Brown;* Frederick Irvine Brown; Ralph Crissman Brown; Sanger Brown; Frank Earle Browning; Edward Arthur *Brucker;* Edmund G. Brust; Edward Buckman; George Enos Burdick; Alexander Walter Burke; Alexander William Burke; Charles *Augustus Burkholder;* William J. Butler; Theodore Fred Butzow; Arthur Frederic Byfield; Maurice William Kirby Byrne.

Archie Byron Calvin; Thomas D. Cantwell; Joseph Almarin Capps; Francis Vincent Carberry; Hayes William Carlin; Herbert Chapman Carothers; Ralph Waldo Carpenter; Thomas Albert Carter; Emor L. Cartwright; Eugene Cary; Frank Cary; French S. Cary; Charles Prowse Chaffin; Earl R. Chamness; Harrison Gerald Champlin; Frank A. Chapman; Eugene Joseph Chesrow; Joseph Paul *Chiasson; Clarence Robert* Chouinard; Henry Christiansen; Edward Albert Christofferson; Olaf Herman Christoffersen; *Frank Spooner Churchill; Eugene G. Clancy;* Carl Wesley Clark; Elbert Clark; Floyd Marion Clark; Peter S. Clark; William *Arthur Clark; Festus Claybon; Blaine Wilson Claypool;* Charles F. Clayton; Herman C. Clayton; Joseph Patrick Cleary; Oscar Cleff; *Loyd Brandon Clinton; Hiram Bryan Cloud;* Ralph Benjamin Cobb; Michael Milton Cody; Mayer S. Coffler; Mandel A. Isaac Cohen; Lazarus Cohler; *Charles W. Colebaugh;* James Patrick Collins; Lorin Cone Collins; Sidney Beeson *Conger;* Arthur Charles Conrad; George Asbury Conrey; *Francis James Conroy; Bernard P. Conway;* Homer Percival Cooper; Norman *Copeland;* Edward Augustine Corcoran; John Webster Cornell; Franklin Joseph Corper; Charles A. Costello; Thomas Cottrell; Roy H. Cox; Alexander Righter Craig; *Thomas Stanley Crowe;* William Robert Cubbins; Carey Culbertson; Malcolm Cunningham; Louis T. Curry; Arthur Hale Curtis; William Cuthbertson; Irwin Herbert Cutler; Lloyd David Cutting; Leo Matthew Czaja.

Thomas L. *Dagg; Elmer Olaf Dahl; George Lawrence* Alfred Dale; Leon Eugene Dallwig; John Earle Damron; John *Dryden Davenport; Vernon C. David; Ray H. Davies; Raymond Evan Davies; Carl Henry* Davis; George Gilbert Davis; Nathan Smith Davis III; Frank Deacon; Calvin *Morgan De Beck; William De Boer; James T. Degan;* Edward Vincent Del Beccaro; Abraham Lincoln Desser; George Frederick Dick; Spencer Cornelius *Dickerson; Frank Santo Di Cosola;* Victor Peter Diederich; Andrew Jackson *Dinsmore;* Phillip Schuyler Donane; John Milton *Dodson;* Edmond James *Doering;* Maurice *Doktorsky;* John Edward Dolan; Edward Frank Dombrowski; *Harry J. Dooley;* William A. N. Dorland; *Alexander Aloysius Drill;* Emilius C. Dudley; Frank Thomas Duffy; Royal Wade Dunham; *Harry Coleman Dunlavy; Harry* Joseph Dwyer.

Frank B. *Earle;* Lewis Kent Eastman; Roscoe Conklin Eaton; Tally John Echerer; Charles Patt Eck; John *William Eckstein;* Samuel Martin Edison; *Alfred Theodore Eide;* Daniel Nathan Eisendrath; Joseph Eisenstaedt; Charles D. Eldred; William Tupper Elliott; Raymond Frank Elmer; *Lynn W. Elston;* John F. England; Samuel S. Epstein; John Eterno; *Arthur Morgan Evans;* John Henry Evans.

Emanuel Montague Fainer; George Franklin Farman; Patricinne J. H. Farrell; John Favill; *Roy Ralph Ferguson; James Henry Field;* Ephraim K. *Findlay; Thomas Francis Finegan;* Victor Finsand; Anton John Firtik; Morris Fishbein; Eric Franklin Fisher; Frederick Alfred Fisher; *Hart Ellis Fisher;* William *Burnham Fisk; Robert Emmett Flannery;* Samuel Clifton Fleming; Clarence Wallace Flint; James Lennon Foley; Thomas P. Foley; *Max Lyon Folk; Alexander William Fordyce;* Claude R. G. *Forrester;* Earle Bloodgood Fowler; Edson Brady Fowler; Charles Moses Fox; *Edward Francis Fox; John Sebastian Fox; Frank Fred Fraider;* Chetwynd Mair Franchere; Frank Doig Francis; Jacob Frank; F. O. Frederickson; *Horatio Putnam Freemen; Carl Freund; Stanton* Abeles Friedberg; Joseph Friedman; Isaac Jacob Frisch; Horace B. *Frost; John Garfield Frost; Kendall Phelps Frost; Herbert H. Frothingham;* William Fuller; Neil Eugene Funk.

Fred William Gaarde; *Michael Archangle Galgano; Michael L. Gallagher;* William J. Garard; Herbert Thomas Garrison; Wesley Emmet Gatewood Jr.; Harry Gauss; Robert J. Gay; John Joseph Gearin; *Maurice* F. Geehan; William Henry Gebl; Arthur Henry Geiger; *Raymond Horace* George; Jesse Robert Gerstley; Willis Stanley Gibson; John Gervase Goggin; Julian Jerry [illegible]ice Louis Goodkind; *Jacob* Abraham Goodman; [illegible]arry Searle Gradle; *Evarts* Ambrose Graham; Jo[illegible]nt Judson Gray; Jesse Trott Grayston; Frederick [illegible] *Stephen Green;* Philip B. Greenburg; *Richard Frederick Greening;* Louis Alexander Greensfelder; Robert Scott Gregg; Patrick Joseph Griffin; *Evan Henry* Montgomery *Griffiths Jr.; George* (Duro) Guca; Nordahl Osmund Gunderson; Spencer DeWitt Guy.

Millard Wilson *Hall; Ernest K. Hallock;* Albert Edward Halstead; Walter Wile Hamburger; James Lloyd Hammond; Reuben Caldwell Hanchett; Arthur R. Hansen; Oscar Amadeus Hansen; Theodore Lorentz Hansen; Oliver Cromwell Hargreaves; Carleton A. Harkness; LeRoy Harold Harner; Roy W. Harrell; Charles Francis Harris; Urban Bunyon Harris; Jacob R. Harry; Perry Vernon Hartman; Basil Coleman Hyatt Harvey; James [illegible] Arthur Henry Hauber; Lorens Aden Haug; Austin [illegible]iel Bernard Hayden; Daniel Francis Hayes; Franc[illegible] William Andrew Heap; Daniel J. Hayes; Harry [illegible]don Egan Hein; Alvin George Helwig; Robert Houston Henderson; Karl Johan Henricksen; William *John Henry;* Carl *Bernhard* Herrmann; William Eugene Hervey; Julius Hays Hess; Clarence J. Hicks Jr.; William J. Hickson; John Higginson; David S. Hillis; Edwin Frederick Hirsch; Edwin Walter Hirsch; J. C. Hoag; Julius Henry Hoelscher; Harry Richard Hoffman; Leo George Hogan; Thomas Aldhelm Hogan; Edmond Arthur Holberg; Alvin Ambrose Holden; William Henry Holmes; Lewis Andrew Hopkins; *Percy* Earl Hopkins; *David Alfred Horner;* John Allan Hornsby; William Henry Howard; William Welles Hoyt; Timothy Stephen Huggard; Albert Herman Hundermark; *James Edward* Hunter; Sherman Rogers Hurlbut; Clayton James Hyslop.

Ernest Edward *Irons; Harry Theobus* Isacowitz; William Israelson.

A. Dudley Jackson; Clarence Augustus Jacobson; Guy Herbert Jacobson; Vernon Meadows Jared; Joseph Francis Jaros; Martin Bushnell Jelliffe; Edward Lealand Jenkinson; Frank Joseph Jirka; Edward William Johannes; Henry C. Johannes; *Carl* John Johannesson; Anderson R. F. Johnson; Russell Martin Johnson; Joseph Andrew Johnston; Louis Campbell Johnston; Alfred Edward Jones; Harold Eldred Jones; Yngve Joranson.

Joseph Charles Kaczkowski; Frank S. Kadlec; Jacob V. Kahn; Allen B. Kanavel; Robert Emmett Keating; Harry Katz; David Henry Keller; John Edward Kelly; James William Kelly; *Joseph Aloysius* Kelly; Ray-

Platt County

ATWOOD—Jos. Alexander Pinckard. BEMENT—Albert Field. MANSFIELD—Eugene Yetman Young. MONTICELLO—Winfield Grant McDeed.

Pike County

CHAMBERSBURG—Jesse Harrison McIntosh. GRIGGSVILLE—George E. Iterman. PLEASANT HILL—John William Turner. PITTSFIELD—Frank Newton Wells.

Pope County

BROWNFIELD—Lewis Marshall Field. WALTERSBURG—Roy Albert Walther.

Fulaski County

MOUND CITY—Alonzo Thomas Griffin; Hall Whiteaker.

Putnam County

FLORID—Frank Erwin Brinckerhoff.

Randolph County

RED BUD—John Turk Riess.

Richland County

OLNEY—Ralph King; Ernest Jerome Worthington.

Rock Island County

EAST MOLINE—Thomas Franklin Nell; Walter Walden. MOLINE—August Henry Arp; Henry Sumner Bennett; Arvid Ernest Kohler; Karl W. Wahlberg; Arthur Dudley West; Hiram La Mont Youtz. ROCK ISLAND—Ralph Dart; Joseph R. Hollowbush; Bernard Miller; Patrick Francis O'Farrell; Abraham B. Rimmerman; Mervin Hays Smith; Alfred Stocker; Ford Cooper Walsh. SILVIS—William Day Chapman.

Saline County

ELDORADO—Charles Lowery Garris; Franklin Benjamin Pearce; Silas Walter Williams. HARRISBURG—Charles M. Fuson; Douglas Archer Lehman; Herbert Lloyd Thompson. STONEFORT—John M. McSparin.

Sangamon County

ILLIOPOLIS—Corwin Spencer Mayes. NEW BERLIN—Charles McLaughlin; Thos. Rhea Maxwell. SPRINGFIELD—Emil Lawrence Bernard; Robert Irving Bullard; Walter William Coen; Herman Harrison Cole; Gladstone C. Conlin; Frank Nathaniel Evans; Francis Drennan Fletcher; Edwin Bruce Godfrey; Charles Frederick Harmon; Herbert Bailey Henkel; Charles Hibbe; Harry Lorenzo James; George Noble Kreider; Franklin Maurer; John R. Neal; Ira Elton Neer; Fred Summa O'Hara; Daniel Mortimer Ottis; Robert Emmett Smith; George Frederick Sorgatz; George Willard Staben; Christopher B. Stuart; Herman H. Tuttle; John A. Wheeler; Ernest Clifford White; John Joseph Wilkinson; Jay Thomas Wood.

Schuyler County

RUSHVILLE—Willis Frederick Harvey.

Shelby County

COWDEN—Thomas Ewing Cherry. FINDLAY—Carl Foster Snapp. SHELBYVILLE—Oliver C. Brown. TOWER HILL—Franklin Albert Martin.

Stark County

CASTLETON—Charles Wells Neill. OSCEOLA—Philip Fout Roberts. SPEER—Clauson Morril Wilmot. TOULON—Martin Rist Chase. WYOMING—John George Henson.

Stephenson County

FREEPORT—Elmer Howard Best; Floyd Ellsworth Best; James Ned Buchanan; William Jacob Rideout; Edward Warren Sikes; Clair Lazarus Stealy. WYOMING—John George Henson.

St. Clair County

BELLEVILLE—Walter Albert Dew; John Charles Gunn; George Engelmann Hilgard; William Lucius Meng; Grover Cleveland Otrich.

EAST ST. LOUIS—Lee Davis Applewhite; Millard F. Arbuckle; Lawrence Judah Bernard; Tullie Van Boyd; William Walter Boyne; Irenaeus Lister Foulon; George Manting; Edw. Christian Spitze; Harley Gibson Stanton; Royal Tharp.

Tazewell County

EAST PEORIA—Arthur Caldwell Gillam. HOPEDALE—Harlan W. Brink. WASHINGTON—O. Prescott Bennett.

Union County

ANNA—Joseph A. Campbell; Christian Herman Diehl; David H. Keller; George Franklin Rendleman. JONESBORO—William Garland White.

Vermilion County

DANVILLE—Henry S. Babcock; Francis William Barton; John Ten Broeck Bird; Ernest Boone Downs; Mark M. Duffy; Arnold Wilhelm Garlitz; Melvin Leo Hole; Roy Malley Montfort; Hiram E. Ross; Ira Joseph Scott; James Holland Williamson. FAIRMOUNT—Belza Newton *Sherman. GEORGETOWN—Marcus S. Fletcher*; Elmer Maurice Smith. HOOPESTON—Robt. Stanton McCaughey. MUNCIE—Oscar W. Michael. RIDGEFARM—Samuel Myers Hubbard. ROSSVILLE—Everett E. Howard.

Wabash County

KEENSBURG—Olen Clyde Brown. MT. CARMEL—Albert A. Ankenbrandt; Cale Curtis Craig.

Warren County

CAMERON—Henry Samuel Zimmerman. MONMOUTH—Harry Lewis Kampen. ROSSVILLE—George William Clarke.

Washington County

ASHLEY—Harry Ingraham Stevens. OKAWVILLE—Robert Berry Jack.

Wayne County

FAIRFIELD—Isaac Logan Garrison.

White County

CARMI—James Alfred Boyer; Frank C. Sibley. ENFIELD—Clinton Staley. GRAYVILLE—Hugh Q. Allison.

Whiteside County

MORRISON—Charles Henry Beadles. STERLING—Frank W. Brodrick; Edward W. Wahl. TAMPICO—Archie S. Horn; Roy Hitchien Wilson.

Will County

CRETE—Warren Caldwell Blim. JOLIET—Francis Henry Gburczyk; *John William Krohn; Horace Raymond Lyons; Harry* Albert Myers; Frederick E. Roberg; Edwin Robert Talbot. PEOTONE—John Bell Howe. PLAINVILLE—John L. Aleshire.

Williamson County

CARTERVILLE—Andrew John Aird. BRUSH—Frank Deason. CREAL SPRINGS—Paul Richard Copeland; Herbert George Hempler. HERRIN—Lester Wade Baker; Paul Gilbert Capps; William Henry Ford; Frank Clay Murrah. JOHNSTON CITY—Lewis H. Green. MARION—Harvey Austin Felts; Loren Lycurgus Fowler; Dausa Dow Hartwell.

Winnebago County

ARGYLE—Willard Phelps Earngery. DURAND—Charles Alexander Roberts. ROCKFORD—Gerald R. Allaben; *Clarence McKee Cheadle*; George Patrick Gill; Harold Harvey; Jos. S. Lundholm; William E. Park; John Rice Porter; Emanuel Matthew Rundquist; Alfred Arthur Willander. ROCKTON—Anthony Bernard Zwaska.

Woodford County

BENSON—William Clement Cotton. SECOR—Frank Emil Nagel. WASHBURN—Frank Blair Ireland.

INDIANA STATE MEDICAL ASSOCIATION

Officers 1917-18

Jos. R. Eastman, President	Indianapolis
V. V. Cameron, First Vice President	Marion
H. H. Martin, Second Vice President	La Porte
E. A. Sturn, Third Vice President	Jasper
Chas. N. Combs, Secretary-Treasurer	*Terre Haute*

Councilor Districts and Officers

Chairman, W. R. Davidson, Evansville; Secretary, *Chas. N. Combs*, Terre Haute.

First District.—Vanderburg, Warrick, Spencer, Pike, Gibson, Posey and Perry counties. W. R. Davidson, Councilor, Evansville.

Second District.—Knox, Sullivan, Greene, Owen, Monroe, Daviess and Martin counties. J. P. Maple, Councilor, Shelburn.

Third District.—Crawford, Dubois, Lawrence, Orange, Harrison, Scott, Clark, Floyd and Washington counties. Jos. D. Heitger, Councilor, Bedford.

Fourth District.—Bartholomew, Brown, Decatur, Jackson, Jennings, Jefferson, Ripley, Dearborn, Ohio and Switzerland *counties*. W. H. Stemm, Councilor, North Vernon.

Fifth District—Vigo, Vermillion, Parke, Clay and Putnam *counties. Jos. H. Weinstein, Councilor, Terre Haute*.

Sixth District.—Rush, Hancock, Shelby, Henry, Wayne, Fayette, Union and Franklin counties. O. J. Gronendyke, Councilor, Newcastle.

Seventh District.—Marion, Hendricks, Morgan and Johnson counties. T. B. Eastman, Councilor, Indianapolis.

Eighth District.—Blackford, Delaware, Madison, Randolph and Jay counties. G. W. H. Kemper, Councilor, Muncie.

Ninth District.—Montgomery, Fountain, Boone, Clinton, Tipton, Tippecanoe, Warren and Hamilton counties. Fred A. Tucker, *Councilor*, *Noblesville*.

Tenth District.—Benton, Jasper, Newton, Porter, Laporte and Lake counties. E. M. Shanklin, Councilor, Hammond.

Eleventh District.—Carroll, Cass, Miami, Wabash, Huntington, Grant and White counties. G. G. Eckhart, Councilor, Marion.

Twelfth *District.—Adams, Allen*, Whitely, DeKalb, Noble, Steuben, Lagrange and Wells counties. E. E. Morgan, Councilor, Ft. Wayne.

Thirteenth District.—St. Joseph, Elkhart, Starke, Marshall, Kosciusko, *Pulaski and Fulton counties*. H. H. Miller, Councilor, South Bend.

HONOR ROLL

Adams County

BERNE—Daniel Dailey Jones.

Allen County

FORT WAYNE—Charles Griffin Beall; Daniel R. Benninghof; Raymond J. Berghoff; Howard Verosta Blosser; *Henry Otto* Bruggeman; Warren D. Calvin; Willis W. Carey; Marshall B. Catlett; Charles Rowley Dancer; Earl Coulson Eberly; Baruch M. Edlavitch; Waldo Clay Farnham; Adrian E. Fauve; John Henry Gilpin; Allen Hamilton; Donald Dinnie Johnston; Edgar Nelson Mendenhall; *Dorsey Dean* Metcalf; Miles F. Porter; Lyman Talmadge Rawles; Bonnelle Wm. Rhamy; Elmer Clayton Singer; Budd Van Sweringen; Lewis Parker Drayer.

HUNTERTOWN—Harry George Erwin.

Bartholomew County

COLUMBUS—Alfred Plummer Roope. ELIZABETHTOWN—Lonzo Harrison Redman. HARTSVILLE—Flavius Jasper Beck. HOPE—William Clyde Heilman.

Benton County

BOSWELL—Henley Harvey Hubbard. EARL PARK—Clyde T. Bundy.

Blackford County

HARTFORD CITY—William Wise. MONTPELIER—Marion Amos Emshwiller.

Boone County

JAMESTOWN—Thomas Brown Johnson.

Carroll County

CAMDEN—Thomas Logan Cooper; Benj. Franklin Wray. DELPHI—Charles Cass Crampton; Oliver Edward Griest. OCKLEY—Frederick C. Locke.

Cass County

LOGANSPORT—Will W. Holmes; *Harry* Charles Johnson; James V. Nelson; James Justice Stanton; Rodney E. Troutman. ONWARD—Ara Carl Badders. WALTON—James *Francis Hatfield*. YOUNG AMERICA—Daniel Edgar Lybrook.

Clark County

HENRYVILLE—Stephen Benton Elrod. JEFFERSONVILLE—David Cohen; Claude Charles Crum; Henry Heft Reeder; James *Henry Walker*.

Clay County

BRAZIL—Clint C. Sourwine; Fred C. Dilley. CENTER POINT—Lewis Courtney Rentschler.

INDIANA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Adams	337	11.6	21,840	753	29	1	10	20	20	1
[1]Allen	661	3.8	105,149	607	173	7	82	117	93	25
Bartholomew	407	7.6	24,971	471	53	2	10	24	27	4
Benton	403	24.0	12,688	746	17	1	10	16	16	2
Blackford	168	11.2	15,820	1,054	15	1	8	15	14	2
Boone	427	10.4	24,673	601	41	3	13	24	20	1
Brown	324	54.0	7,975	1,329	6	..	3	3	..	..
Carroll	377	10.4	17,970	499	36	1	18	20	24	5
Cass	416	5.3	37,696	483	78	1	35	52	43	8
Clark	375	9.6	30,260	775	39	..	17	23	14	5
Clay	361	8.5	32,535	774	42	..	16	20	24	3
Clinton	408	7.5	26,674	493	54	..	21	33	16	4
Crawford	303	20.2	12,057	803	15	..	6	7	8	..
Daviess	433	11.7	27,747	749	37	2	13	21	23	4
Dearborn	313	11.1	21,396	764	28	1	16	23	18	6
atur	378	9.9	18,793	494	38	1	17	25	17	3
lb	370	9.2	25,054	626	40	2	22	26	21	6
aware	392	3.8	52,718	516	102	3	37	56	52	10
ubois	427	13.7	19,843	640	31	..	13	22	15	6
Elkhart	462	5.6	51,894	632	82	1	24	52	60	7
Fayette	216	9.8	15,085	685	22	..	12	19	12	2
Floyd	148	2.7	30,421	573	53	2	20	30	32	3
Fountain	395	10.1	20,439	524	39	..	16	25	22	7
Franklin	394	23.1	15,335	902	17	..	4	4	7	..
Fulton	367	14.6	16,879	675	25	..	8	17	15	..
Gibson	486	10.8	30,164	670	45	..	17	25	29	1
Grant	423	4.5	51,426	558	92	6	33	55	48	8
Greene	543	14.2	42,963	1,130	38	1	19	50	38	3
Hamilton	399	8.4	27,026	575	47	1	16	29	23	5
Hancock	307	9.9	19,030	613	31	1	13	23	21	1
Harrison	486	19.4	20,232	809	25	1	12	15	7	3
Hendricks	408	11.3	20,840	578	36	1	19	22	23	3
Henry	397	7.0	33,167	592	56	1	23	34	33	4
Howard	297	4.6	36,536	570	64	..	31	42	18	7
Huntington	386	9.4	29,040	708	41	..	13	23	33	5
Jackson	518	15.6	24,747	749	33	..	14	20	23	2
Jasper	562	56.2	13,044	1,304	10	..	9	9	9	2
Jay	375	9.8	24,961	656	38	2	14	25	18	2
Jefferson	364	10.4	20,483	585	35	1	10	19	17	2
Jennings	383	23.9	14,203	887	16	..	6	7	12	2
Johnson	322	6.7	20,517	427	48	1	10	24	19	3
Knox	510	6.8	43,881	585	75	1	35	50	42	8
Kosciusko	541	12.0	27,936	620	45	..	19	29	25	9
Lagrange	387	18.4	15,148	721	21	..	10	12	16	2
Lake	492	2.7	145,891	819	178	6	93	109	97	11
Laporte	595	9.7	51,205	839	61	5	32	46	49	12
Lawrence	456	12.3	34,198	924	37	..	14	25	22	2
Madison	450	4.2	65,224	621	105	3	25	55	52	11
[2]Marion	397	0.5	312,153	421	740	36	441	563	332	119
Marshall	441	10.2	24,175	562	43	1	12	22	26	9
Martin	339	24.2	12,950	925	14	..	7	8	10	1
Miami	381	7.6	30,084	601	50	..	26	39	25	7
Monroe	416	11.5	25,288	702	36	2	12	26	22	4
Montgomery	501	7.1	29,296	418	70	3	23	38	35	7
Morgan	406	10.1	21,709	542	40	..	17	23	17	4
Newton	405	22.5	10,543	585	18	..	7	13	9	1
Noble	417	13.9	24,355	811	30	..	14	19	25	2
Ohio	85	12.1	4,329	618	7	..	2	4	5	..
Orange	407	12.7	17,437	544	32	..	12	17	15	2
Owen	393	17.0	14,053	611	23	..	5	11	10	..
Parke	447	12.7	22,214	634	35	1	20	24	20	8
Perry	384	22.5	18,078	1,063	17	..	7	10	12	2
Pike	338	13.5	19,684	787	25	..	9	12	14	1
Porter	415	14.3	21,535	742	29	..	14	21	17	2
Posey	402	12.1	21,670	656	33	..	11	22	17	2
Pulaski	432	27.0	13,312	832	16	..	9	10	15	1
Putnam	483	14.6	20,520	621	33	..	10	20	21	3
Randolph	447	9.1	29,275	597	49	1	19	26	29	7
Ripley	448	13.1	19,452	572	34	1	14	19	17	5
Rush	409	13.6	19,349	644	30	..	14	23	21	4
[3]St. Joseph	460	3.9	102,874	879	117	5	52	87	66	14
Scott	190	19.0	8,334	833	10	1	3	6	3	2
Shelby	407	9.2	27,027	614	44	1	14	28	15	3
Spencer	403	10.8	20,676	558	37	..	14	23	17	2
Starke	305	25.4	10,666	888	12	..	4	8	1	..
Steuben	305	8.7	14,274	407	35	1	9	11	8	5
Sullivan	460	10.4	37,135	843	44	1	19	35	41	2
Switzerland	222	18.5	9,914	826	12	..	4	8	9	3
Tippecanoe	503	6.9	41,087	570	72	1	41	53	53	4
Tipton	260	7.6	17,459	513	34	2	16	21	23	6
Union	162	20.2	6,260	782	8	..	3	5	6	..
[4]Vanderburg	233	1.5	81,576	554	147	5	69	102	78	20
Vermillion	254	8.4	21,502	716	30	..	15	19	15	5
[5]Vigo	409	2.6	106,830	680	157	2	80	109	90	19
Wabash	425	9.8	26,926	626	43	3	18	26	26	6
Warren	368	11.5	10,899	340	32	1	6	26	19	5
Warrick	392	10.0	21,911	561	39	1	12	20	14	2
Washington	519	17.3	17,445	581	30	..	10	13	8	2
Wayne	411	4.9	47,257	569	83	4	38	50	51	8
Wells	365	13.5	22,418	830	27	..	10	19	22	1
White	507	17.4	17,602	606	29	1	14	15	8	3
Whitley	338	12.0	16,892	603	28	1	12	14	20	4
Totals	36,045	7.5	2,914,193	611	4,763	135	2,106	3,109	2,591	529

1. Includes Fort Wayne, population 74,352; physicians 147 [M.R.C. 24].
2. Includes Indianapolis, population 265,578; physicians 712 [M.R.C. 114].
3. Includes South Bend, population 67,000; physicians 89 [M.R.C. 11].
4. Includes Evansville, population 72,125; physicians 141 [M.R.C. 19].
5. Includes Terre Haute, po[illegible]06; physicians 122 [M.R.C. 16].

Daviess County

ALFORDSVILLE—Aaron M. Winklepleck. ODON—Ira Edgar Bowman. WASHINGTON—George Washington Boner; Revel Francis Banister.

Dearborn County

AURORA—John Martin Jackson; Omer Hall Stewart; Arlie John Ullrich. LAWRENCEBURG—Arthur Thomas Fagaly. MOORES HILL—David E. Johnston; Earl H. Mitchell.

Decatur County

GREENSBURG—Charles Robert Bird; Charles Edward Phipps; Paul Raphael Tindall.

DeKalb County

AUBURN—Archie Verl Hines; Dorsey M. Hines; John Augustus Leas. GARRETT—John Wm. Thomson. WATERLOO—Ethan Alexander Ish; Espy Kerl Schurtz.

Delaware County

DALEVILLE—Franklin Taylor Kilgore; O. Arnold Tucker. MUNCIE—Frederick L. Bunch; Eldo Horace Clauser; Fred Leib Glascock; Earle S. Green; Byrl Raymond Kirkin; Michael Robinson. SELMA—Samuel Gilbert Jump. YORKTOWN—John Frank Downing.

DuBois County

FERDINAND—Andrew Fidelis Gugsell. HAYSVILLE—Elmer Ernest Eifert. HOLLAND—Herman Marcus Baker. HUNTINGSBURG—Sherman Logan McKinney; Harvey Kasper Stork; Leo Albert Salb.

Elkhart County

ELKHART—Orrie Ianthas Hetsler; Lloyd Albert Elliott; James Anderson Work Jr. GOSHEN—George W. Kirby. MILLERSBURG—Lloyd Himbaugh Simmons. WAKARUSA—Charles Leonard Amick.

ELKHART—George Watson Twomey.

Fayette County

CONNERSVILLE—Herman Wayne Smekser. EVERTON—Melville Ross.

Floyd County

GALENA—Albert Glenn Kinberger. NEW ALBANY—George Huff Day; Charles Frederick Voight.

Fountain County

ATTICA—Clinton G. Beckett; Louis Austin Bolling; J. Roy Burlington. COVINGTON—James Wesley Aldridge. FOUNTAIN FARM—Charles Wallace Taylor. SILVERWOOD—Jos. C. Keller. WALLACE—Theophilus Parvin Caplinger.

Gibson County

PRINCETON—Harry Baldwin Gudgel.

Grant County

JONESBORO—Philip H. Lucas. MARION—Merrill Stamper Davis; Otis McQuown. NATIONAL MILITARY HOME—John Ernest Kelly; Charles Edward Peters; Henry C. Weber. ROANOKE—Edwin Wm. Schultz. UPLAND—Ellis T. Stout.

Greene County

JASONVILLE—Alfred Wilbur Hadley. SOLSBERRY—Frederick Samuel Deem. WORTHINGTON—Harvey Samuel Cook.

Hamilton County

NOBLESVILLE—George D. Haworth; Sam Wishard Hooke; Henry Herbert Thompson; Frederick A. Tucker. SHERIDAN—Edward Milton Young.

Hancock County

MAXWELL—Samuel D. Clayton.

Harrison County

CORYDON—Alva G. Thomas. DEPAUW—Charles Culley Sutter. LANESVILLE—Benjamin Jay Teaford.

Hendricks County

DANVILLE—Jacob Ader; Jay Harold Grimes. NORTH SALEM—Elmo Ray Royer.

Henry County

KENNARD—Walter Thomas Vandament. NEWCASTLE—Clyde C. Bitler; Chester Adam Marsh; E. K. Westhafer.

Howard County

GREENTOWN—Elbert Earl Freeman. KOKOMO—Chas. J. Adams; Clarence Leroy Bock; Frederick Arthur Henderson; George Dixon Marshall; Byron Johnson Peters; Burton A. Thompson.

Huntington County

BIPPUS—Homer S. Hewitt. HUNTINGTON—Mitchell Chase Clokey; Maurice Hill Krebs. MARKLE—Robert Gray Johnston. ROANOKE—Spies Valentine Wilking.

Jackson County

SEYMOUR—Edwin G. Kyte; John Harper Niles.

Jasper County

RENSSELAER—Cecil Emerson Johnson. WHEATFIELD—Malcolm Brown Fyfe.

Jay County

BRYANT—Grover Allen Smith. PORTLAND—Edgar Raymond Hiatt.

Jefferson County

BROOKSBURG—William Scott Dow. HANOVER—Carl Henning.

Jennings County

BUTLERVILLE—Miles Frederick Daubenheyer. ZENAS—Charles Colfax McFarlin.

Johnson County

EDINBURG—Walter Waldo Wright. NINEVEH—Ephraim Bassiel Chenoweth. WHITELAND—Chas. Edwin Woodcock.

Kosciusko County

CLAYPOOL—George Carr Taylor. LEESBURG—Pierre Gerold Fermier. MILFORD—Forrest Johnston Young. SIDNEY—Paul A. Garber. SYRACUSE—Clifford Ray Hoy. WARSAW—Chas. Norman Howard; Samuel

Eayre
ebster

y; L. J. Quillin; August Omer Truelove.

Knox County

BICKNELL—Charles W. Ashley; Forrest Leslie Reese. DECKER—Emery Frank Small. VINCENNES—Myron Curtner; Morris H. C. Johnson; James Norman McCoy; Everett Herbert Pea. WHEATLAND—Robert Stanton Wood.

La Grange County

LA GRANGE—Carlos C. Rozelle; John Theron Short.

Lake County

EAST CHICAGO—Helmuth C. W. Ernst; Porter W. Hopkins; Robert Spear. GARRY—Harry Marvin Hosmer; John Eugene Metcalf; Albert August Watts; Irving Henry Willett. HAMMOND—Joseph Allen Graham. INDIANA HARBOR—Eli Levin. WHITING—Edward Lucian Dewey; Edw. Kellan Newton.

La Porte County

KINGSBURY—Ben Webster. LA PORTE—George Washington Kimball; Myron G. Marlay; Harvey H. Martin; George Robert Osborn; Wilbur Wesley Ross; Franklin Trumbull Wilcox. MICHIGAN CITY—John Whitfield Bowers; Russell Adams Gilmore; Arthur Lell Leeds. WESTVILLE—Edwin Geo. Nelson; Forrest Joy Pinkerton.

Lawrence County

BEDFORD—Michael Beck Guthrie; Olin Bertram Norman.

Madison County

ANDERSON—Albert W. Collins; John Bartow Fattle; Henry Washington Gantc; George H. Hockett; Lee F. Hunt; Thomas Monroe Jones; Weir Mitchell Miley; James McCann Stoddard; Julius Ross Tracy. SUMMITVILLE—Lewis Franklin Mobley; Will Carleton Moore.

Marion County

BEECH GROVE—Raymond Alfred Butler. BROAD RIPPLE—John A. Marsh.

INDIANAPOLIS—Horace Russell Allen; John A. M. Aspy; Clarence Earl Barcus; Charles Fred Bayer; Thurman Ross Beaver; Raymond Cole Beeler; George Washington Bowman Jr.; Frank Alembert Brayton; Eugene Buehler; Earl Russell Bush.

Clayton C. Campbell; Larue D. Carter; Edmund Dougan Clark; Paul Barnett Coble; Charles J. Cook; Chas. E. Cottingham; Kenneth Lawrence Craft.

Benjamin Thomas Daggy; John Thomas Day; Louis Elmer Derendorf; William August Doeppers; Edouard Julien Dubois; Lehman M. Dunning.

Jos. Rilus Eastman; Scott Robert Edwards; John W. A. Emhardt; Leonard Austin Emsminger; William Jennings Erkenbeck.

Frederick Falk; Elmer Funkhouser; Chester North Frazier.

Wm. Elmer George; William Walden Gibbs; Herman Henry Glick; Alois Bachman Graham; Nathan P. Graham; Arthur Ernest Guedel; Charles B. Gutellius; George Lewis Guthrie.

Earl Hazelton Hare; Fred Earl Hickson; Walter Frederick Hickman; Claude DuVall Holmes; Amel Wolfe Hon; Fred Leo Hosman; Charles Delph Humes; Paul Thomas Hurt; Frank Frazier Hutchins.

Henry Wilbur Irwin; Gustavus Brown Jackson; Charles Harold Jones; Clarence Kenneth Jones; Thomas B. Victor Keene; Bernays Kennedy; Edwin Nicholas Kime; Luke W. Kuebler.

Napoleon LaBonte; Bernard John Larkin; George Winlock Leç; Mason B. Light; Ralph Laudis Lochry.

John Albert Martin; Paul Frederick Martin; Leslie Howe Maxwell; Clifford Hill Hayfield; Edward Leroy McCoy; Carleton Buel McCulloch; Jesse Leroy McElroy; Desmond F. McGuire; Donald Lee Miller; Robert Martin Moore; Eugene Bishop Mumford.

Harold Nimal; Jay D. Nusbaum; Lyman Overshiner.

Lafayette Page; Geo. H. Pendleton; Smith Alonzo Quimby.

Simon Reisler; Robert Eldon Repass; Joseph Warren Ricketts; Earl B. Rinker; Fowler Burdette Roberts; William Luther Royster; John A. Salb; Louis H. Segar; Harry Albert Shimp; Floyd Nicholson Shipp; John William Sluss; James Madison Smith; Troy Smith; Roy Lee Smith; Edgar Frank Sommer; Chas. Robert Sowder; Fredk. Alexander Stokes; Roy Basil Storms; Walter Moses Stout; Cecil G. Sutherlin.

Ray Henry Thomas; Harrison Thurston; Elston Lacroix Titus.

Ernest DeWolfe Wales; Frank Columbia Walker; Joseph Henry Ward; Frederick Charles Warfel; Cecil Lafayette Wayman; Hillard L. Weer; Arthur Ferdinand Weyerbacker; Edward Augustus Willis; George W. Wood; Charles Edwin Woods.

INDIANAPOLIS—Harold Simon Hatch; John Ray Newcomb.

MIDDLEBURG—Melvin S. Teters. NEW AUGUSTA—Charles Raymond Elfers. OAKLANDON—Harold S. Hatch.

Marshall County

ARGOS—Frank Hetherington Kelly. BOURBON—George Lyman Marshall. BREMEN—Raymond Chase Denison. CULVER—Oliver Carlisle Fennett; Homer Hinton Tallman. PLYMOUTH—John J. Hardy; H. Paul Preston; Harry Ernest Woodbury; Harry Knott.

Martin County

INDIAN SPRINGS—John William Pahmeier.

Miami County

BUNKER HILL—William C. Moss. CHILI—Homer Earl Line. CONVERSE—Andrew Sutton Newell.

PERU—Ottho R. Lynch; George Warren Newell; John Paul Spooner; George G. Van Mater.

Montgomery County

[illegible]; Chester Warren Howard;
Ge [illegible] Burr Talmage. LINDEN—
Ja [illegible] Williams. WAVELAND—
Thomas Zopher Ball.

Monroe County

BLOOMINGTON—Raymond A. Akin; Fletcher Gardner. BLOOMINGTON—Geo. Frank Holland. ELLIOTTSVILLE—Walter William Harris.

Morgan County

MARTINSVILLE—George Dales Breedlove; Frank C. Robinson. MONROVIA—Everett Floyd Grave. MOORESVILLE—Millard F. Brackney.

Newton County

BROOK—Glen David Larrison.

Noble County

ALBION—John W. Green. LIGONIER—Virgil G. Hursey.

Orange County

FRENCH LICK—Joseph Rodolphus Dillinger. WEST BADEN—Harry Clay Sharp.

Parke County

JUDSON—Grover Carlisle Price. MONTEZUMA—Omer Atherton Newhouse. ROCKVILLE—Joseph R. Bloomer; Edward G. Brandenberger; John Julian Connelly; Raymond B. T. Sweany; Raymond Earl Swope; Chester Samuel White.

Perry County

MAGNET—James Humbert. TELL CITY—Fred Nathaniel Williams.

Pike County

PETERSBURG—Edward S. Imel.

Porter County

VALPARAISO—Claude Weldy; Simon J. Young.

Posey County

NEW HARMONY—Kelley Charles Fitzgerald. STEWARTSVILLE—George Henry Parmenter.

Pulaski County

STAR CITY—Edward Estill Johnston.

Putnam County

GREENCASTLE—Joseph Franklin Gillespie; Brandt Elmer Lemmon. RUSSELLVILLE—David Emanuel P. Reed.

Randolph County

CARLOS—Charles Earl Martin. UNION CITY—Robert William Reid; Raymond A. Voisinet; Marshall A. Welbourn. WINCHESTER—Ivan Ernest Brenner; John Stanley Robinson.

UNION CITY—Ward Clifton Zeller.

Ripley County

CROSS PLAINS—Charles David Ryan. MILAN—Irving Alcedo Whitlatch. NAPOLEON—Lafayette Thomas Cox. PIERCEVILLE—Hubert P. Butts. VERSAILLES—Tony Edward Hunter.

Rush County

GLENWOOD—Harry S. Osborne. MILROY—Merton Almond Farlow. RUSHVILLE—Lowell M. Green; Carroll J. Tucker.

Scott County

LEXINGTON—Charles B. Matthews. SCOTTSBURG—Edwin Mercer Wells.

Shelby County

MORRISTOWN—Harold Bailey Cox. SHELBYVILLE—Tell C. Waltermire. WALDRON—Sewell Briggs Coulson.

Spencer County

HATFIELD—John Clay Glackman. ROCKPORT—Orlon Chapin Snyder.

St. Joseph County

MISHAWAKA—Theodore Frederick Seymour. SOUTH BEND—Albert Edward Barber; Harry Boyd-Snee; Harry Linford Cooper; Thomas James Dehey; Thos. Pope Goodwyn; John Samuel Hickman; Hugh H. Miller; Edgar Harris Myers; Adam F. Panek; Robert Clarence Shanklin; Perry C. Traver; John Emerson Whitehill. WYATT—Leslie Ambrose Kuhn.

Steuben County

ANGOLA—Mark Duane Gundrum; Frank B. Humphreys; William Henry Lane. FREMONT—Blaine Andrew Blosser. HAMILTON—Angus Laverne Cameron.

Sullivan County

FARMERSBURG—Harry Clay Odell. SULLIVAN—Paul Higbee.

Switzerland County

EAST ENTERPRISE—Wesley Marion Hall. VEVAY—Daniel W. Dodd; Alva A. Shadday.

Tippecanoe County

LAFAYETTE—Arett C. Arnett; Manford Marion Clapper; Don C. McClelland. ROMNEY—Ora Lee McCay.

Tipton County

SHARPSVILLE—Ernest Edward Leeson. TIPTON—Hanson Smiley Gifford; Linley Murray Reagan; Arvine Earl Mozingo; Robert Milton Recobs. WINDFALL—Burt Vivian Chance.

Vanderburg County

EVANSVILLE—Wm. Robert Arthur; Ross Bradley Bretz; Joseph Burnside Cox; William Ruston Davidson; Wallace Curtis Dyer; William S. Ehrich; Ephraim Melvin Folsom; Warren Wilburn Hewins; John George Huber; Samuel Rudolph Laubascher; Paul Vernon Lynch; Edgar Franklin Magenheimer; Benoni Stinson Rose; Howard Randall Thompson; Reavill Millard Walden; Joseph Herbert Willis; Arthur Henry Wilson; Geo. Howard Wilson. MT. VERNON—George Wheeler Wilson.

EVANSVILLE—Jeremiah Jackson.

Vermilion County

CLINTON—Frank McHarry Beeler; Raymond Evans. DANA—William Cleveland Myers. NEWPORT—Ithimer Maxwell Casebeer; Jones Lindsey Saunders.

Vigo County

NORTH TERRE HAUTE—Earl Martin Shores. RILEY—Herchel Victor Brunker. TERRE HAUTE—Oliver Alexander; Leon Francis Barbazette; Lyman A. Burnsides; Otto Casey; Chas. Nathan Combs; Malachi R. Combs; James Lyle Fortune; John Elias Freed; Wilfred P. Freligh; George Thompson Johnson; Melcherd Heimer Kutch; Albert M. Mitchell; Thomas Cromwell Stunkard; Jos. Hamilton Weinstein; Edward Andrew Weir. WEST TERRE HAUTE—Rufus Joel Danner.

TERRE HAUTE—Joseph Adolph Frisz.

Wabash County

LA FONTAINE—James Lynn Walker. ROANN—James Gordon Kidd. WABASH—Thomas Kirby Davis; Walter Amazia Domer; Laurence E. Jewett; Frederick Meredith Whisler.

Warren County

KRAMER—Robt. Estes Lee; Edward Orton Little; Walter D. Martin. PINE VILLAGE—Duffield Dufferin MacGillivray. WEST LEBANON—Carl Emerson Johnson.

Warrick County

BOONEVILLE—John Tilden Samples. LYNNVILLE—Richard L. Ralbourn.

Washington County

SALEM—Jules Lewis Bierach; Ervin Eugene Huckleberry.

Wayne County

EAST HAVEN—Joseph Sherman Craig; Fredk. L. Darrow. RICHMOND—Thomas Pounall Govan; Julius Johnston *Grosvenor*; *Stephen* Chas. Markley; Walter Leroy Misener; Arthur James Whallon.
EAST HAVEN—Lee Marcus Green.

Wells County

PETROLEUM—Geo. Burr Morris.

White County

BROOKSTON—L. B. Rariden. BURNETT'S CREEK—Walter McBeth. MONTICELLO—Guy Rupert Coffin.

Whitley County

COLUMBIA CITY—David Leston Lutes; Benjamin Franklin Pence. SOUTH WHITLEY—Fred G. Eberhard; Bruce David Hart.

IOWA STATE MEDICAL SOCIETY

Officers 1917-18

J. N. Warren, President	Sioux City
J. E. Luckey, First Vice President	Vinton
H. B. Gratiot, Second Vice President	Dubuque
T. B. Throckmorton, Secretary	Des Moines
T. F. Duhigg, Treasurer	Des Moines

Councilor Districts and Officers

First District.—Henry, Jefferson, Lee, Louisa, Van Buren, Des Moines and Washington counties. John R. Walker, Councilor, Ft. Madison.

Second District.—Clinton, Iowa, Jackson, Johnson, Muscatine and Scott counties. L. W. Littig, Councilor, Iowa City.

Third District.—Blackhawk, Bremer, Buchanan, Butler, Delaware, Dubuque, Franklin, Wright and Hardin counties. W. A. Rohlf, Councilor, Waverly.

Fourth District.—Allamakee, Cerro Gordo, Chickasaw, Clayton, Fayette, Floyd, Howard, Mitchell, Winneshiek and Worth counties. Paul E. Gardner, Councilor, New Hampton.

Fifth District.—Benton, Cedar, Grundy, Jones, Linn, Marshall and Tama counties. G. E. Crawford, Councilor, Cedar Rapids.

Sixth District.—Davis, Jasper, Keokuk, Mahaska, Monroe, Poweshiek and Wapello counties. Smith A. Spilman, Councilor, Ottumwa.

Seventh District.—Dallas, Madison, Marion, Polk, Storey and Warren counties. Channing G. Smith, Councilor, Granger.

Eighth District.—Adams, Appanoose, Wayne, Clarke, Decatur, Fremont, Lucas, Page, Ringgold, Taylor and Union counties. J. F. Aldrich, Councilor, Shenandoah.

Ninth District.—Adair, Audubon, Cass, Guthrie, Harrison, Mills, Montgomery, Pottawattomie and Shelby counties. A. L. Brooks, Councilor, *Audubon.*

Tenth District.—Palo Alto, Pocahontas, Winnebago, Boone, Calhoun, Carroll, Crawford, Emmett, Greene, Hamilton, Hancock, Humboldt, Kossuth and Webster counties. W. W. Beam, Councilor, Rolfe.

Eleventh District.—Buena Vista, Cherokee, Clay, Dickinson, Ida, Lyon, Monona, O'Brien, Osceola, Plymouth, Sac, Sioux and Woodbury counties. G. C. Moorehead, Councilor, Ida Grove.

IOWA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Adair	573	33.7	14,736	866	17	1	9	17	21	2
Adams	427	30.5	11,131	795	14	1	6	7	9	1
Allamakee	639	27.8	17,328	753	23	..	8	18	13	2
Appanoose	513	11.9	30,725	714	43	..	23	32	23	2
Audubon	443	36.9	12,671	1,055	12	..	4	9	11	1
Benton	712	25.4	24,591	878	28	..	19	25	21	4
[1]Blackhawk	565	6.5	53,962	620	87	1	42	66	61	6
Boone	569	22.8	29,696	1,187	25	2	18	25	24	2
Bremer	434	19.7	16,968	771	22	1	7	16	20	2
Buchanan	567	17.2	19,748	598	33	2	19	43	38	7
Buena Vista	571	23.8	17,212	717	24	..	12	22	14	2
Butler	577	21.4	18,014	667	27	1	8	25	17	1
Calhoun	568	20.3	17,808	636	28	3	13	25	25	4
Carroll	571	17.3	20,997	636	33	1	15	29	18	4
Cass	564	16.6	19,787	581	34	2	15	34	33	2
Cedar	570	21.9	17,765	683	26	..	14	23	14	3
Cerro Gordo	567	8.8	31,734	495	64	3	22	19	18	9
Cherokee	573	44.0	16,863	1,297	13	..	20	24	8	7
Chickasaw	497	16.5	16,089	596	30	..	11	20	20	..
Clarke	428	28.5	11,028	735	15	..	5	6	6	..
Clay	563	35.2	14,656	915	16	1	9	15	10	1
Clayton	762	19.0	25,576	639	40	3	13	36	29	4
Clinton	691	13.5	46,532	912	51	2	32	45	35	8
Crawford	715	24.6	20,581	709	29	1	13	23	14	4
Dallas	589	14.4	25,610	624	41	1	23	33	25	8
Davis	501	23.8	13,315	634	21	1	9	12	12	2
Decatur	533	16.1	17,148	516	33	1	10	28	24	3
Delaware	571	28.5	18,564	928	20	..	9	20	20	2
Des Moines	409	8.0	36,257	710	51	2	19	42	35	3
Dickinson	376	34.2	9,465	860	11	..	4	11	10	..
[2]Dubuque	601	4.8	60,975	487	125	3	50	125	68	7
Emmet	393	28.1	11,360	811	14	1	5	13	11	2
Fayette	724	20.7	29,257	835	35	..	24	33	26	5
Floyd	495	19.0	18,213	700	26	..	17	19	11	2
Franklin	578	18.1	15,841	495	32	..	10	20	20	2
Fremont	507	16.3	16,067	518	31	1	12	31	17	2
Greene	574	23.0	16,339	653	25	..	14	24	24	2
Grundy	501	27.8	14,051	780	18	..	10	15	14	..
Guthrie	595	22.0	18,416	708	26	1	..	26	24	..
Hamilton	570	19.6	20,514	707	29	3	14	26	22	6
Hancock	570	35.0	13,886	857	16	..	6	16	15	4

1. Includes Waterloo, population 31,131; physicians 63 [M.R.C. 5].
2. Includes Dubuque, populati 39,650; physicians 66 [M.R.C. 7].

IOWA—Continued

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Hardin	569	15.4	22,484	607	37	..	19	35	34	5
Harrison	691	22.3	24,327	784	31	1	17	30	22	5
Henry	427	9.7	18,640	423	44	..	18	31	13	2
Howard	468	29.2	13,929	870	16	..	9	11	11	4
Humboldt	431	28.7	13,013	867	15	..	9	13	4	3
Ida	430	22.6	11,656	613	19	1	10	18	9	3
Iowa	583	20.1	18,666	613	29	..	14	28	27	5
Jackson	632	22.6	21,258	759	28	1	12	25	24	6
Jasper	720	12.8	27,496	482	57	1	21	43	23	1
Jefferson	431	16.6	16,922	650	26	5	14	20	19	3
Johnson	610	65.0	27,330	290	94	..	52	82	80	16
Jones	659	21.2	19,050	614	31	..	16	24	17	4
Keokuk	578	13.5	21,225	493	43	3	18	40	33	5
Kossuth	973	42.3	24,200	1,052	23	..	13	22	22	2
Lee	511	6.4	38,101	476	80	1	39	76	64	10
[3]Linn	709	5.1	70,153	503	138	6	58	105	102	20
Louisa	396	23.3	12,855	756	17	..	6	15	8	3
Lucas	432	16.6	15,120	581	26	2	12	12	2	3
Lyon	582	30.6	15,688	825	19	1	10	17	17	3
Madison	563	22.5	15,621	624	25	..	7	20	15	2
Mahaska	568	14.2	29,860	746	40	..	18	33	20	9
Marion	563	14.4	23,972	614	39	1	20	39	30	6
Marshall	572	10.2	32,994	587	56	4	28	56	54	4
Mills	438	18.2	15,811	658	24	..	16	24	21	3
Mitchell	463	28.9	14,435	902	16	..	7	13	6	1
Monona	686	31.2	17,378	789	22	2	12	22	19	2
Monroe	432	16.6	30,862	1,187	26	..	11	25	22	2
Montgomery	424	17.7	17,297	720	24	3	11	18	18	2
Muscatine	432	10.0	30,427	707	43	1	19	29	28	2
O'Brien	569	20.3	18,582	663	28	..	13	22	18	1
Osceola	395	30.4	10,169	782	13	..	6	12	12	1
Page	531	14.0	24,773	651	38	1	21	27	14	3
Palo Alto	561	37.4	14,965	997	15	..	6	15	14	1
Plymouth	856	34.2	23,799	951	25	..	17	25	24	5
Pocahontas	576	23.0	15,635	625	25	..	13	25	25	4
[4]Polk	582	2.1	130,740	475	275	14	138	217	179	45
[5]Pottawattamie	942	11.2	56,922	677	84	5	37	68	55	20
Poweshiek	580	17.0	19,965	587	34	2	17	30	30	3
Ringgold	540	24.5	13,280	603	22	..	13	22	20	1
Sac	574	28.7	17,030	851	20	1	8	15	13	..
[6]Scott	449	3.8	66,162	582	117	2	67	93	57	20
Shelby	589	23.6	16,692	667	25	..	12	25	24	4
Sioux	760	28.1	26,642	986	27	..	16	27	22	2
Story	567	10.7	25,787	486	53	1	25	34	28	7
Tama	720	24.0	22,806	760	30	1	16	30	24	1
Taylor	534	21.4	16,549	661	25	..	10	22	22	2
Union	427	15.8	17,168	635	27	..	16	25	22	1
Van Buren	477	15.9	15,020	500	30	..	10	23	23	2
Wapello	428	6.5	39,433	606	65	..	26	48	48	11
Warren	570	20.3	13,194	471	28	..	11	23	25	3
Washington	559	14.7	20,004	526	38	..	19	28	27	6
Wayne	524	15.8	16,184	490	33	1	14	31	15	3
Webster	714	14.0	38,811	761	51	1	17	50	50	9
Winnebago	399	26.6	13,564	904	15	1	7	14	11	1
Winneshiek	686	27.8	22,238	889	25	2	6	20	18	4
[7]Woodbury	864	5.7	82,315	541	152	2	88	119	83	23
Worth	399	33.2	11,188	932	12	..	8	12	12	..
Wright	576	23.0	19,651	786	25	..	9	30	26	7
Totals	55,587	13.9	2,476,526	618	4,004	107	1,775	3,156	2,595	454

3. Includes Cedar Rapids, population 36,583; physicians 96 [M.R.C. 16].
4. Includes Des Moines, population 99,144; physicians 254 [M.R.C. 41].
5. Includes Council Bluffs, population 31,131; physicans 51 [M.R.C. 13].
6. Includes Davenport, population 47,127; physicians 94 [M.R.C. 14].
7. Includes Sioux City, population 55,588; physicians 124 [M.R.C. 20].

HONOR ROLL

Adair County

FONTANELLE—Ira James Gibson. GREENFIELD—Earl Owen Reynolds.

Adams County

PRESCOTT—William Henry Clary.

Allamakee County

POSTVILLE—Otto James Blessin. WAUKON—Cecil G. Morehouse.

Appanoose County

MORAVIA—William Harris. MYSTIC—Laurell L. Lugar.

Audubon County

AUDUBON—Daniel Francis Mathias.

Benton County

BELLE PLAINE—*Don Hamilton Newland; Carl John Snitkay; George* William Yavorsky. BLAIRSTOWN—Raymond Alvah Seiler.

Blackhawk County

CEDAR FALLS—Thomas Johannes Heldt. WATERLOO—Elmer I. Dunkelberg; Leo Erwin Evens; Ben C. Everall; William Henry Jenks Jr.; Guthrie McConnell.

Boone County

BOONE—Mark Clyde Jones; Ben Tallman Whitaker.

Bremer County

SUMNER—Edwin Edward Wuttke. WAVERLY—Robert Henry Lott.

Buchanan County

INDEPENDENCE—Fred F. *Agnew; Henry Clemend Allen; Percy* B. Battey; Roy C. Jackson; Samuel Connell Lindsay; Judd Campbell Shellito. JESUP—Frank E. Shimer.

Buena Vista County

REMBRANDT—William Marvin Hubbard. STORM LAKE—James Horatio O'Donoghue.

Butler County

NEW HARTFORD—Dyre Henry Pelletier.

Calhoun County

LOHRVILLE—Edgar R. Earwood. MANSON—Thomas Blanchard Herrick; Hugh Mullarky. ROCKWELL CITY—Lewis Edward Eslick; Jefferson Newton Holt.

Carroll County

BREDA—Edward Webster Bookhart. CARROLL—Milton Joseph Freeman. DEDHAM—Cecil Claude Bowie. TEMPLETON—Otis Philip Morganthaler.

Cass County

GRISWOLD—Harrison L. Wyatt. MARNE—Chas. Walter Lyon.

Cedar County

DURANT—Julius Lewis Shryer. LOWDEN—Albert John Charlton. MECHANICSVILLE—Frank Albert Priessman.

Cerro Gordo County

CLEAR LAKE—Albin Blackmore Phillips. MASON CITY—William Jacob Egloff; Charles Lemuel Marston; James Edward McDonald; Frank G. Murphy; Stephen Ambrose O'Brien; Burton French Weston; Burton Raymond Weston. ROCKWELL—John Francis Meany.

Cherokee County

CHEROKEE—Prentiss Bowden Cleaves; Richard Gardner Eaton; William Arthur Howard; Morley Daniel McNeal; Fisher B. E. Miller; Love Elree Pennington; LeRoy Anderson Wescott.

Clay County

SPENCER—Roscoe Durr Taylor.

Clayton County

FARMERSBURG—Jesse Clifford Ross. McGREGOR—William Harper Thomas. MONONA—Kinsley Renshaw. STRAWBERRY POINT—George Earl Hesner.

Clinton County

CLINTON—David Sturgess Fairchild Jr.; Kurt Jaenicke; Edward L. Martindale; Harry Rogers Reynolds; Elmer Paul Weih. DE WITT—Morton Lyon. LOST NATION—Raymond Eugene Robinson.

LOW MOOR—Ralph Frank Luse.

Crawford County

CHARTER OAK—George Ray Hill; Thomas Frederich Thomsen. MANILLA—Walter E. Draper. WESTSIDE—Charles Luther Patterson.

Dallas County

ADEL—Harry Clay Irvin. DE SOTO—Martin T. Brewer. PERRY—Christian Henry Dewey; Henry Irl McPherrin; Harry Blaine Wilkinson. REDFIELD—Henry Edward Kleinberg. WOODWARD—Thomas Lee Long.

PERRY—Arthur James Ross.

Davis County

BLOOMFIELD—Paul Francis Guernsey; Charles Dalton Shelton.

Decatur County

LEON—Clairemont Hogue Mitchell. LAMONI—Oscar Hedberg Peterson; Paul Forrey Stookey.

Delaware County

GREELEY—Walter W. A. Kresensky. MASONVILLE—Leonard James Bowman.

Des Moines County

BURLINGTON—George B. Crow; Arthur Churchill Strong; Edward John Wehman.

Dubuque County

DUBUQUE—Arlie Vernon Bock; Lafayette Helmuth Fritz; Eugene Lewis; Dan Laurence Mahoney; Harry Caldwell Parker; Alanson Madison Pond; Edward Harvey White.

Emmet County

RINGSTED—James Kaykendale Guthrie. WALLINGFORD—Thomas Vincent Golden.

Fayette County

HAWKEYE—Thomas Nelson Walsh. OELWEIN—Dan William Shine. WAUCOMA—Walter Henry Fox. WEST UNION—Thomas Andrew King; Frank Beach Whitmore.

Floyd County

CHARLES CITY—William Leihton Griffin. NORA SPRINGS—Oscar Herman Banton.

Franklin County

HAMPTON—George Frederick Johnston; Howard Hubbard Johnston.

Fremont County

HAMBURG—Royal Clark Danley. SIDNEY—Audley Emmet Nelson.

Greene County

GRAND JUNCTION—Andrew Irvin Reed. JEFFERSON—Benjamin Charles Hamilton Jr.

Hamilton County

STRAFFORD—Carl Kall. WEBSTER CITY—Robert Cochran Crumpton; Franklin Joseph Drake; Ward Hannah; Everett Eugene Richardson. WILLIAMS—Francis Stephen Carey.

Hancock County

BRITT—Walter Simmons Chester; Edward Alexander Couper. CORWITH—Rollin Slosson Fillmore Jr. GARNER—George Arthur Bemis.

Hardin County

ACKLEY—James W. Thornton. IOWA FALLS—Clarke W. Mangun; Clarence McCarty Wray. NEW PROVIDENCE—Garnet Smith Felt. STEAMBOAT ROCK—J. Willard Caldwell.

Harrison County

LOGAN—Hans Hansen. MODALE—Amos V. Cooper. MONDAMIN—Walter George Finley; Donald H. Pitts. WOODBINE—Haramont Nathaniel Anderson.

Henry County

NEW LONDON—Frank Raymond Mehler. SALEM—Edgar Allen Stewart.

Howard County

CHESTER—Andrew Clinton Hansen. CRESCO—William Thomas Daly; George A. Plummer. LIME SPRINGS—Herbert William Plummer.

Humboldt County

BRADGATE—Frank Harold Gaffey. LIVERMORE—John Joseph Bowes; Paul Nicolai.

Ida County

BATTLE CREEK—James McAllister; Eugene W. Wolcott. IDA GROVE—Edward S. Parker.

Iowa County

MARENGO—Ira Nelson Crow. MILLERSBURG—Louis Burton Amick. NORTH ENGLISH—Ulysses Simpson Geiger; Harry Jacob Jones. WILLIAMSBURG—Irvin John Simi.

Jackson County

ANDREW—Leslie Worthington Rantz. BELLEVUE—John Chase Dennison. MAQUOKETA—Louis B. Carson; Stuart Howard Bowman; Frederick J. Swift. MILES—William Darwin McFaul.

Jasper County

MONROE—John Wm. Billingsley. NEWTON—Charles Everett Moore. PRAIRIE CITY—Clyde Randolph Van Voorhis.

KELLOGG—John Thomas Hanna.

Jefferson County

BATAVIA—John H. Baldridge. FAIRFIELD—James Frederick Clarke; Lora Douglas James.

Johnson County

IOWA CITY—Howard Lombard Beye; Thomas Roy Gittins; John B. Gregg; Edwin Elmer Hobby; Harry Rogers Jenkinson; Leo Arthur Nelson; James Joseph Rock; Jason Ned Smith; Elliott Sheldon Stong; Thomas Harrison Van Camp; Clarence Van Epps; Herman LeRoy Von Lacklom; George John Wenzlick; Theodore A. Willis. MT. VERNON—Herbert Rappael Mills; Edwin Cleveland Yoder.

Jones County

ANAMOSA—Clyde Leslie Van Patten. OLIN—Seward White; Howard Moore Williamson.

MONTICELLO—Colin Caudonz Thomas.

Keokuk County

HEDRICK—Rex Vale Henry; James Arthur Porter. KEOTA—Roy Robert Miller. KESWICK—Alvah Negus. WHAT CHEER—Charles Burr Taylor.

Kossuth County

ALGONA—Walter Fraser; Evert Clarence Hartman.

Lee County

FORT MADISON—Walter Harry Grimwood; Robert Stollt Reimers; Frederick Warner Sallander; Frederick Louis Wahrer.

KEOKUK—W. Frank Brown; Frank Manley Fuller; Bruce Lock Gilfillan; Henry Arthur Gray; Clarence Horace Kinnaman; George Raymond Narrley; William Rankin; William P. Sherlock; Fred C. Smith. SUMMITVILLE—Jesse Lee Saar.

Linn County

CEDAR FALLS—William L. Hearst.

CEDAR RAPIDS—Claude E. Aborn; Roy Colony Alt; Charles Glenn Baird; Charles Herbert Cogswell Jr.; Harold Russell Conn; Benjamin Richard Johnston; Roy Kneale Keech; Solon Mitchell Langworthy; Ralph E. Munden; Frederick Gray Murray; William Harwood Olmsted; Frank Palmer Riggie; George Coleman Skinner; John E. Stansbury; Rudolph Augustus Vorpahl; Arlo Richard Zuercher.

CENTER POINT—Clarence Hays Doty. CENTRAL CITY—James Bliss Owen. LISBON—John Raphael Gardner.

Louisa County

COLUMBUS JUNCTION—Frank Albert Hubbard. LETTS—Elliott R. King. GRANDVIEW—Oliver W. McGrew.

Lucas County

CHARITON—Roy Clark Gutch; Leo Cornelius Kuhn. PURDY—John Archie Matson.

Lyon County

INWOOD—Alexander Porter Stewart.

LARCHWOOD—Arthur Lewis Druet. LITTLE ROCK—Millard Ferdinand Smith.

Madison County

EAST PERU—Lawrence Lewellyn Craven. MACKSBURG—Merl Lee Pindell.

Mahaska County

BARNES CITY—James Alva Paradise. OSKALOOSA—Kenneth L. Johnston; Earl Derward McClean. NEW SHARON—Samuel Willard Hartwell; John Edward Morgan. ROSE HILL—Harry Everette Carver.

Marion County

COLUMBIA—Harry Lee Bridgman. KNOXVILLE—Corwin Schaffner Cornell; Arthur E. Shappell. PELLA—Carl Aschenbrenner; Jacob John Sybenga. PLEASANTVILLE—Elmer A. Bare.

Marshall County

MARSHALLTOWN—James F. Battin; Aaron Clyde Conaway; George Earl Hermance; Robert Crichton Molison.

Mills County

GLENWOOD—Erik M. P. Sward. PACIFIC JUNCTION—Gerald Vaughan Caughlan.

MALVERN—Malcolm Samuel Campbell.

Mitchell County

ST. ANSGAR—Gerhard Frederick Hartwig.

Monona County

UTE—Lloyd Stanley Nease. WHITING—Clarence Harman.

Monroe County

ALBIA—Merle Bone; Albert Gartfield Byers.

Montgomery County

RED OAK—Abel Benson George; Russell Montague Young.

Muscatine County

MUSCATINE—Edmond Bland Ballard Fulliam Jr.; John Wilford Stiers.

O'Brien County

SUTHERLAND—Thomas D. Kas.

Osceola County

HARRIS—Clinton Colfax Cady.

Page County

SHENANDOAH—Joseph Walter Sellards; Charles Elmer Kellogg.
CLARINDA—Donald Enfield.

Palo Alto County

EMMETSBURG—Harold Linhoff Brereton.

Plymouth County

AKRON—Johnstone H. Kerr; George Mattison Jr. LE MARS—Erwin Julius Gottsch. MERRILL—Armand Naffziger. STRUBLE—Harry Francis Rubel.

Pocahontas County

GILMORE CITY—Charles Lee Jones. POCAHONTAS—Garner Forsemen Parker. ROLFE—Edmund Willoughby Wilson. VARINA—John Charles Creane.

Polk County

BERWICK—Isaac Hugh Odell.

DES MOINES—Arthur J. Booker; Wm. Frederick Brinkman; Thomas A. Burcham; Wilbur S. Conkling; James Arthur Downing; Thomas F. Duhigg; John William Elder; Rodney P. Fagan; Abraham George Fleischman; George Seeley Gilpin; Milton Abe Given; Daniel Johnson Glomset; Calvin Waldo Harned; Francis Roderick Holbrook; Alden Robbins Hoover; James Everett Kessell; Francis La Plana; Emery Wilfred Lehman; Charles Nickolas Olson Leir; Clifford Welcome Losh; Robert James Lynch; Meredith Mallory; James William Osborn; Rosewell Herschell Payne; William Wilson Pearson; John Hyren Peck; Alfred Stirgus Price; John Russell; Charles Edward Ruth; Charles Francis Smith; Albert B. Stuart; R. Fred Throckmorton; Joseph Walter Tyrrell; Julius N. Van Meter; Clifford Webb Wells; Frank Arthur Will; Frank L. Williams; Howard Jesse Wright; George Spurgion B. Yates; Guss Bross Young; Bernard Joseph Callahan.

ELKHART—Philip Vial Ketchum. FORT DES MOINES—John F. Loosbrock. VALLEY JUNCTION—John Earl Kiley.

Pottawattamie County

AVOCA—George Albert Spaulding. COUNCIL BLUFFS—Frank E. Bellinger; Henry Aaron Cobb; Emmet Lefevre Hawkins; Albert Vincent Hennessy; Maurice Charles Hennessy; Louis LeRoy Henninger; Chalmers Alexander Hill; Konigmacher Adam Hiestand; Donald Macrae Jr.; Sydney Dale Maiden; Edwin Atkins Merritt; John Stephen McAtee; Robert Shibley Moth. HANCOCK—John Frank Standeven. MACEDONIA—Meredith Byrne Murray. McCLELLAND—Fred William Niehaus. MINDEN—Grant Augustine. NEOLA—Willard A. Bates; Guy Seward.

Poweshiek County

BROOKLYN—Charles Dorrance Busby. GRINNELL—Ora Frank Parish. MONTEZUMA—Oran West King.

Ringgold County

MOUNT AYR—Walter Franklin Schmaltz.

Scott County

BETTENDORF—Jefferson Duddleston Blything. BUFFALO—George Washington Frank. DAVENPORT—Larned V. Allen; Hugh Pierce Barton; George S. Bawden; Charles Earl Block; Edward S. Bowman; Emil Otto Ficke; Walter Edward Foley; Theodore Wilbert Kemmerer; Raymond Ranney Kulp; Frederick Howe Lamb; John Vincent Littig; John C. Murphy; Peter H. Schroeder; Will Fred Speers. DIXON—William Sherwood Binford. ELDRIDGE—Walter Edward Foley. PRINCETON—William Garfield Johnson. WALCOTT—John Archibald McIntyre; Lee E. Shafer.

Shelby County

DEFIANCE—Valentine John Meyer. HARLAN—Elliott Cunningham Cobb; Jay Dee Dunshee. KIRKMAN—Albert Edward Sabin.

Sioux County

HAWARDEN—Fred. J. McAllister. IRETON—Thomas Elzir McCaughan.

Story County

AMES—Earl B. Bush; Joseph John Knepper; George Frederick Puffett. MAXWELL—William M. Trotter. ROLAND—Roy W. Smith. SLATER—Herbert Pease.
GILBERT—William Louis Hoffman.

Tama County

TOLEDO—Arthur A. Pace.

Taylor County

LENOX—Jay S. Caldwell; Leoman D. Huff.

Union County

CRESTON—James G. Macrae.

Van Buren County

FARMINGTON—Lonnie A. Coffin. STOCKPORT—Frederic John Graber.

Wapello County

BLAKESBURG—Ralph Jackson Selman. OTTUMA—Walter E. Anthony; Edward T. Edgerly; LeRoy Murdoch Bannister; Frederick W. Boles; Elmer John Lambert; Donald Aaron Hammer; John Francis Herrick; Harold A. Spilman. McElderly; Frank Wilbur Mills; Harold A. Spilman.

Warren County

INDIANOLA—John G. Davis; Martin Luther Hooper. MILO—Louis Lee Bowie.

Washington County

BRIGHTON—Roy Alvin McGuire; Marcus C. Terry Jr.; James Everett Edgington. WELLMAN—Fordyce H. McCabe. RIVERSIDE—George Maresh.
WELLMAN—Floyd Henry Weidlein.

Wayne County

ALLERTON—John Harvey McCall. CORYDON—Ben S. Walker. MILLERTON—Sylvanus Weston Corbin.

Webster County

DAYTON—Harry Franklin Klesling. DUNCOMBE—Joseph Larcher Ruyavitz. FORT DODGE—Edward Francis Beeh; William Franklin Carver; Paul Ernest M. Kersten; Arthur Henry McCreight; William Murry Wildman. MOORLAND—Charles Troy Farlow. VINCENT—Carroll D. Parsons.

Winnebago County

LAKE MILLS—Laurence J. Kaasa.

Winneshick County

DECORAH—Albert Everett Conrad; James Joseph Daly; John Daniel Hexom; Milton Dana Jewell.

Woodbury County

HORNICK—Nathaniel Palmquist; Charles Bernard Rentz. SIOUX CITY—Carl Estep Bosley; James Ray Brady; Louis Dwight Cheney; James Christiansen; Charles Emery Frear; Joseph W. B. Flageolle; Thomas Marsden Heard Jr.; Alvin H. Hendrickson; VanBuren Knott; Charles Thomas Maxwell; Jesse Blaine Naftzger; Elmer Remle Park; James Elery Reeder; Frank Garretson Rhodes; Fredk. H. Roost; Prince Edwin Sawyer; Harry Johnson Schott; Joseph Patrick Sheehy; John William Shuman; John E. Trierweiler. SLOAN—*Prescott Lee Washton.*

Wright County

BELMONT—George Heath Steele. CLARION—Franklin Augustus Stevens; Ranson Drips Bernard. DOWS—Orson Arza Kellogg. EAGLE GROVE—John Raymond Christensen; Luther Donald McNaughton.
ROWAN—William Null Gordon.

KANSAS MEDICAL SOCIETY

Officers 1917-18

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Councilor Districts and Officers

First District.—Nemaha, Brown, Doniphan, Jackson, Atchison, Jefferson, Marshall and Washington counties. Chas. W. Reynolds, Councilor, Holton.

Second District.—Leavenworth, Wyandotte, Johnson, Douglas, Osage, Franklin, Miami, Coffey, Anderson and Linn counties. C. C. Goddard, Councilor, Leavenworth.

Third District.—Woodson, Wilson, Allen, Bourbon, Neosho, Crawford, Montgomery, Labette and Cherokee counties. P. S. Mitchell, Councilor, Iola.

Fourth District.—Clay, Riley, Geary, Waubansee, Pottawattomie, Shawnee, Dickinson, Lyon and Morris counties. O. P. Davis, Councilor, Topeka.

Fifth District.—Barton, Rice, McPherson, Marion, Chase, Greenwood, Butler, Harvey, Reno and Stafford counties. J. J. Brownlee, Councilor, Hutchinson.

Sixth District.—Pratt, Kingman, Elk, Chautauqua, Cowley, Sumner, Harper, Barber and Sedgwick counties. S. S. Edgerton, Councilor, Wichita.

Seventh District.—Republic, Cloud, Jewell, Mitchell, Osbourne and Rooks counties. K. P. Mason, Councilor, Cawker City.

Eighth District.—Russell, Lincoln, Ellsworth, Ottawa and Saline counties. H. N. Moses, Councilor, Salina.

Ninth District.—Cheyenne, Rawlins, Decatur, Norton, Phillips and Smith counties. C. S. Kenney, Councilor, Norton.

Tenth District.—Sherman, Thomas, Sheridan, Graham, Trego, Gove, Logan and Wallace counties. David R. Stoner, Councilor, Quinter.

Eleventh District.—Rush, Pawnee, Edwards, Ford, Hodgeman, Ness, Lane, Gray, Finney, Scott, Wichita, Kearney, Hamilton and Greeley counties. J. A. Dillon, Councilor, Larned.

Twelfth District.—Kiowa, Comanche, Clark, Meade, Seward, Haskell, Stevens, Grant, Stanton and Morton counties. E. M. Carter, Councilor, Greensburg.

KANSAS

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Allen	508	14.9	33,577	987	34	..	12	16	23	5
Anderson	577	33.9	13,829	813	17	..	8	10	8	2
Atchison	412	8.9	29,107	632	46	2	18	20	22	6
Barber	1,134	76.9	12,340	822	15	..	9	11	3	4
Barton	892	35.6	20,862	834	25	..	16	18	19	6
Bourbon	656	18.2	25,077	696	36	..	9	21	21	4
Brown	571	19.6	21,314	724	29	..	13	20	18	3
Butler	1,434	31.1	24,724	537	46	1	22	35	11	3
Chase	751	62.5	7,527	627	12	..	8	9	6	1
Chatuauqua	652	46.5	11,429	816	14	..	5	8	..	..
Cherokee	605	16.3	38,162	1,034	37	..	18	25	17	2
Cheyenne	1,008	252.0	5,422	1,355	4	..	3	3	2	..
Clark	973	139.0	5,838	834	7	..	4	6	4	3
Clay	638	26.5	15,251	635	24	..	16	17	16	4
Cloud	702	21.9	19,512	609	32	..	21	23	21	5
Coffey	644	26.8	15,205	633	24	2	8	14	15	5
Comanche	788	98.5	4,494	561	8	..	4	7	2	1
Cowley	1,133	19.5	32,082	568	58	3	25	35	38	7
Crawford	605	7.4	61,736	759	81	1	45	57	48	9
Decatur	891	89.1	8,976	897	10	..	6	9	4	3
Dickinson	838	20.4	26,220	639	41	..	19	33	21	4
Doniphan	378	19.9	17,191	904	19	..	13	13	10	3
Douglas	469	9.9	25,101	534	47	1	16	28	29	9
Edwards	611	61.1	9,479	947	10	..	6	6	5	3
Elk	652	43.4	10,128	531	15	..	6	10	9	1
Ellis	901	69.3	14,758	1,135	13	..	8	9	2	2
Ellsworth	724	51.7	11,041	783	14	..	8	10	9	3
Finney	1,276	98.1	9,418	724	13	..	4	7	4	..

KANSAS—Continued

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Ford	1,082	54.5	15,697	784	20	..	13	16	14	4
Franklin	585	12.6	22,422	487	46	..	16	29	34	6
Geary	390	24.3	14,095	880	16	2	12	15	11	5
Gove	1,080	216.0	8,675	1,735	5	..	3	5	5	1
Graham	897	179.5	11,274	2,254	5	1	4	4	3	..
Grant	578	.....	1,571	.....	..	..	..	..	..	..
Gray	857	122.4	4,477	639	7	..	3	4	3	3
Greeley	776	776.0	1,949	1,949	1	..	..	1	..	..
Greenwood	1,158	55.1	16,060	764	21	1	8	15	11	4
Hamilton	984	492.0	11,772	5,886	2	..	1	1	..	..
Harper	799	34.7	17,987	782	23	..	11	12	12	3
Harvey	540	13.8	20,376	512	39	1	20	27	26	7
Haskell	577	288.5	1,383	691	2	..	1	1	1	..
Hodgeman	858	289.0	3,587	1,195	3	..	2	2	1	..
Jackson	675	25.0	16,861	624	27	..	8	20	21	5
Jefferson	543	20.1	15,826	586	27	..	14	19	16	3
Jewell	900	39.1	18,148	789	23	2	9	17	14	..
Johnson	486	13.5	18,422	511	36	..	12	22	12	6
Kearny	833	833.0	4,737	4,737	1	..	1	1	1	..
Kingman	867	57.8	15,374	1,024	15	1	11	13	9	1
Kiowa	723	103.2	8,954	1,279	7	..	5	5	6	..
Labette	643	10.7	34,268	571	60	1	28	41	36	11
Lane	715	357.5	3,361	1,680	2	..	1	1	1	1
Leavenworth	440	8.6	41,402	811	51	1	32	41	14	12
Lincoln	721	65.7	10,880	777	14	..	7	10	8	3
Linn	613	25.5	15,255	635	24	..	10	14	14	2
Logan	1,082	270.5	5,901	1,475	4	..	3	3	3	1
Lyon	845	20.6	26,011	631	41	1	18	26	25	3
McPherson	900	29.0	21,931	707	31	1	17	22	21	6
Marion	971	30.0	23,684	816	29	..	17	24	22	5
Marshall	905	24.4	23,889	645	37	2	14	25	17	4
Meade	984	123.0	7,580	948	8	1	4	8	4	..
Miami	602	22.3	20,020	741	27	..	18	20	13	4
Mitchell	713	35.6	14,486	724	20	1	10	15	12	2
Montgomery	644	22.2	64,398	2,220	29	4	33	77	50	7
Morris	696	36.6	12,710	668	19	..	8	14	10	5
Morton	718	239.3	2,229	743	3	..	3	3	1	1
Nemaha	716	23.0	19,072	615	31	1	13	18	21	8
Neosho	580	14.8	27,037	693	39	1	13	22	19	5
Ness	1,079	119.8	6,866	762	9	..	7	8	4	4
Norton	876	48.6	11.823	656	18	..	13	11	10	3
Osage	718	28.7	20,166	807	25	1	11	16	9	..
Osborne	894	47.0	13,714	721	19	..	9	12	12	3
Ottawa	712	39.5	12,269	681	18	1	9	15	10	6
Pawnee	742	67.4	11,613	1,055	11	..	9	10	8	1
Phillips	887	49.2	14,150	786	18	..	8	16	5	..
Pottawatomie	829	37.6	17,522	796	22	..	12	16	7	5
Pratt	726	34.5	14,126	672	21	1	10	18	12	5
Rawlins	1,064	212.8	7,209	1,441	5	..	3	4	1	..
Reno	1,242	16.3	44,295	582	76	1	45	63	41	9
Republic	704	39.1	17,447	969	18	..	12	12	14	2
Rice	707	29.4	15,369	640	24	..	13	20	19	2
Riley	604	24.1	17,210	688	25	..	15	22	20	3
Rooks	890	68.4	13,705	1,054	13	1	8	11	..	2
Rush	719	65.3	9,060	823	11	..	7	9	4	3
Russell	895	63.9	12,437	888	14	..	11	12	6	3
Saline	720	14.7	22,718	540	42	1	19	25	31	5
Scott	714	178.5	4,468	1,117	4	..	1	2	2	1
[1]Sedgwick	994	6.9	94,305	659	143	5	75	108	77	21
Seward	643	91.8	6,477	925	7	..	4	6	7	2
[2]Shawnee	544	3.4	67,821	426	158	..	75	100	97	27
Sheridan	896	224.0	6,987	1,746	4	..	2	4	2	..
Sherman	1,049	209.8	5,428	1,085	5	1	2	4	3	1
Smith	888	46.7	15,672	824	19	..	10	12	16	1
Stafford	796	39.6	14,465	723	20	..	10	14	15	2
Stanton	685	685.0	1,549	1,549	1	..	1	1	..	..
Stevens	729	243.0	3,790	1,263	3	..	1	2	1	1
Sumner	1,179	20.3	34,320	591	58	..	29	42	36	6
Thomas	1,065	266.2	6,435	1,608	4	1	1	2	2	1
Trego	899	179.8	7,351	1,470	5	..	1	4	3	..
Wabaunsee	795	39.7	12,721	636	20	..	12	18	3	3
Wallace	921	307.0	3,912	1,304	3	..	1	3	3	..
Washington	902	30.0	20,229	674	30	..	13	17	20	4
Wichita	721	240.3	2,597	865	3	..	2	2	1	..
Wilson	581	21.5	22,866	845	27	1	10	17	19	2
Woodson	503	35.9	9,460	675	14	..	5	8	7	2
[3]Wyandotte	143	0.8	119,600	672	178	5	106	133	87	26
Totals	81,774	30.6	1,888,868	782	2,668	51	1,345	1,904	1,491	332

1. Includes Wichita, population 67,847; physicians 126 [M.R.C. 20].
2. Includes Topeka, population 47,914; physicians 142 [M.R.C. 26].
3. Includes Kansas City, population 96,854; physicians 155 [M.R.C. 24].

HONOR ROLL

Allen County

HUMBOLDT—Herbert M. Webb. IOLA—John M. T. Baskette; Omar L. Cox; Orestes Lucien Garlinghouse.
MORGAN—Lester Isaac Simpson.

Anderson County

GARNETT—Arthur Benjamin Cullum; Tarlton Ambrose Hood.

Atchison County

ATCHISON—Eugene John Bribach; Hugh Lester Charles; Charles Singleton Ferguson; Thomas Edward Horner; William Francis Smith. POTTER—Sam Monteith Myers.

Barber County

HARDTNER—John Elmer Hammer. HAZELTON—William Leonard Welch. KIOWA—George Robert Waite. MEDICINE LODGE—Thomas Adolphus Coleman.

Barton County

CLAFLIN—Herbert William Jury. ELLINWOOD—LeRoy J. Wheeler. GALATIA—Eugene Monroe Adkins. GREAT BEND—Edward King Lawrence; Clark William Zugg. HOISINGTON—Edward Henry Atkin.

Bourbon County

BRONSON—George Scott Lambeth. FORT SCOTT—John C. Lardner; John Franklin McGill. FULTON—Tiberius L. Jones.

Brown County

BAKER—Henry Herman Olsen. HORTON—Harry Leslie Goss; Harry James Harker.

Butler County

AUGUSTA—John Frazer Pattison. BENTON—Oscar Newton Lightner. DOUGLAS—Joseph Cook Bunten.

Chase County

ELMDALE—Franklin T. Johnson Jr.

Cherokee County

COLUMBUS—Harry H. Brookhart. MINERAL—Earl C. Lightfoot.

Clark County

ASHLAND—Ivan Roy Burket; Paul Congleton Carson; Milton Oscar Nyberg.

Clay County

CLAY CENTER—Ira E. Durant; Emanuel N. Martin; Edwin Clyde Morgan. WAKEFIELD—John Everett Hewitt.

Cloud County

CLYDE—Monte Louis Belot; Francis James Moffatt. CONCORDIA—Leo Eugene Haughey; Ross Eberhardt Weaver. JAMESTOWN—Hugh Duncan McGaughey.

Coffee County

BURLINGTON—Carl Calvin Culver; David William Manson; Henry T. Salisbury. GRIDLEY—Marcellus Lowery Stockton. WAVERLY—Frank C. Boggs.

Comanche County

COLDWATER—Wade Doster.

Cowley County

ARKANSAS CITY—Emanuel Harry Clayton; Milton Hahn; Richard Claude Young. CAMBRIDGE—Daniel Alcott Holland; Seth H. Martin. WINFIELD—Walter Parry Guy; Harold H. Jones.

Crawford County

ARCADIA—Joseph D. Pettet. ARMA—William Elmer Orr. CHEROKEE—Almonta Deaver Hays. GIRARD—Dwight Culver Smith. HEPLER Chas. Louis Mosley. McCUNE—Charles Chapin. MULBERRY—William Allen Parrish. PITTSBURG—Richard Collins Henderson; Walter J. Nichols.

Decatur County

DRESDEN—Fred Raymond Funk. JENNINGS—Henry Osmond Hardisty. NORCATUR—Joseph Watkins Spearing.

Dickinson County

ENTERPRISE—Harrison Washington Wright. HERINGTON—James Welch. HOPE—Charles A. Dieter. MANCHESTER—Dana O. Jackson.

Doniphan County

HIGHLAND—Herbert Homer Smith. TROY—Wilhelm Albert Gartner. WATHENA—John Goldsborough Swails.

Douglas County

LARNED—Cyril Evan Sheppard. LAWRENCE—Ralph E. Barnes; Harry L. Chambers; Charles Francis Ensign; Edmond Ray Keith; Henry St. Clair O'Donnell; Carl Phillips. LE COMPTON—Carey Caldwell Kerr. VINLAND—Charles Everett Yates.

Edwards County

KINSLEY—James Byron Donnell; Walter P. Stoltenberg; Lewis Milward Schrader.

Elk County

MOLINE—Edward Arlington Marrs.

Ellis County

ELLIS—Nathaniel Adair Kidd Jr. HAYS—Casper Joseph Middlekauff.

Ellsworth County

ELLSWORTH—Jirah Marston Downs; Robert Lee Hoffman; Benjamin H. Mayer.

Ford County

BUCKLIN—Alexander Breckenridge Scott. DODGE CITY—Eugene James Broderick; Noble Elmo Melencamp. SPEARVILLE—Leonidas T. Brown.

Franklin County

OTTAWA—George Washington Davis; Boyd Franklin Eye; Charles Benedict Stephens. RANTOUL—Charles Clifford Bennett. RICHMOND—Delmar H. Smith. WILLIAMSBURG—Warwick T. Brown.

Geary County

JUNCTION CITY—Walter A. Carr; Reuben Jay Elliott; Frederick William O'Donnell; Leonard Somerville Steadman. MILFORD—John R. Brinkley.

Gove County

GRAINFIELD—Guy H. Winslow.

Gray County

CIMARRON—Robert Gottfried Klein. INGALLS—Earl V. Adams. *MONTEZUMA—David Charles Munford.*

Greenwood County

CLIMAX—Herschel Ledger Hendricks. EUREKA—George Blaine Garrison. MADISON—James Milton Moore. SEVERY—Walter Allen Hodges.

Harper County

ANTHONY—C. Fremont Cronk; Benjamin Franklin Hawk; Clarence Edward Ressler.

Harvey County

BURRTON—Irl Edwin Hempstid. NEWTON—Harold M. Glover; Ralph C. Hartman; Ralph Harold Hertzler; John Lewis Peppers; John R. Scott; Lawrence Theodore Smith.

Jackson County

DENISON—William Law Wilmoth. HOLTON—Joseph Cook Shaw. MAYETTA—Charles Jay Bliss. SOLDIER—Joseph Richard Adams. WHITING—Guy R. McCreery.

Jefferson County

McLOUTH—Frank Schaeffer. NORTONVILLE—Tena L. Eyerly. PERRY—Arthur Leroy Weisgerber.

Johnson County

DE SOTO—*Alvan Maurice Fortney.* LENEXA—*Lewis G. Allen;* Clifford Calvin Neeselrode. OLATHE—Charles W. Jones. SHAWNEE—Walter Otto Quiring; George Washington Thume.

Kingman County

KINGMAN—Charles Willard Longenecker.

Labette County

EDNA—Charles Alfred Thomas. MOUND VALLEY—Robert M. Bennett; Otto Jarson Dixon. PARSONS—*Elmer E. Bowser; Paul Christmann;* John C. Cornell; Thomas Eugene Crump; Edmond Anderson Lodge; John Guirley Missildine; Arthur Richard Nash; John William Tinder.

Lane County

DIGHTON—Sebree Samuel McGinnis.

Leavenworth County

EASTON—Alonzo Ray Adams. LEAVENWORTH—Albert Leroy Brown; Charles Elliott Brown; Joseph Howard Langworthy; Philip Benjamin *Matz;* Charles James McGee; Fletcher Burr Taylor. NATIONAL MILITARY HOME—Samuel Adams; John A. Barker; John Langley Fryer; Frederick Edwin Kraft; Rezin Clark Shawhan.

Lincoln County

LINCOLN—George Malcolm Anderson; Malcolm Newlon; John Magruder Sutton.

Linn County

CENTERVILLE—George Franklin Porter. MOUND CITY—John Orum *Dingus.*

Logan County

OAKLEY—Charles Melbourne Miller.

Lyon County

AMERICUS—*John B. Brickell; Roy Hammond Edmiston.* EMPORIA—Clarence Clinton Harvey.

Marion County

FLORENCE—Leonard Sweete Wagar. HILLSBORO—Henry Daniel Brunig. MARION—John F. Coffman Jr.; Charles William Matlock. PEABODY—Edward Hinmen Johnson.

Marshall County

BEATTIE—Emory Howard Gist. MARYSVILLE—John B. Close; Edward Lawrence Wilson. WATERVILLE—George Isaac Thacher.

McPherson County

CANTON—Samuel Neal Mallison. GALVA—Lewis Marion Gore. McPHERSON—*C. Freeman Brubaker;* Andrew Engberg; Marvin Hall.

INMAN—Theodore Henry Aschmann.

Miami County

BUCYRUS—Gerald L. *McGonigle.* OSAWATOMIE. Benjamin F. Frazer; Bahnson Weathers. PAOLA—Jacob Henry Haldeman.

Mitchell County

CAWKER CITY—Kirk Patrick Mason. SIMPSON—George Jennings.

Montgomery County

CHERRYVALE—William Grant Norman; Myron Laverne White. INDEPENDENCE—Joseph S. Alford; Frank Winfred Shelton; Chester Orville Shepard. TYRO—Ira Bradford Chadwick.

COFFEYVILLE—Everett Wallace Johnson.

Morris County

COUNCIL GROVE—Arthur John Lewis; Morris Bigelow Simpson. DELAVAN—Logan Illk Evans. DUNLAP—Lewis Scott Harvey. DWIGHT—*George Edwin Brethour.*

Morton County

ELKHART—John Harvey Hansen.

Nemaha County

CENTRALIA—William George Bouse. CORNING—John Child Maxson. SABETHA—William Logan Carlyle; William Roy Dillingham; *Saml. M.* Hibbard; Frederick E. Wrightman. SENECA—Francis Franklin Carter; John Rudbeck.

Neosha County

CHANUTE—*Jesse W. Barker;* Frederick Roland Hickey. ERIE—Ralph Cambern *Henderson.* THAYER—Hal Edward Reece; John Norval *Sherman.*

Ness County

BROWNELL—John Wesley Combs. NESS *CITY—William* Samuel Fleming; Thomas Shirley Venard. *RANSOM*—William Seward Grisell.

Norton County

ALMENA—George L. Dailey. NORTON—Charles Willard Cole; Francis David Kennedy.

Osborne County

ALTON—Bertice Alvin Isenberg. DOWNS—*Jarvis* Edward Hodgson. NATOMA—Emory Alonzo Drake.

Ottawa County

ADA—Ulysses Simpson Boyer. MINNEAPOLIS—Arthur Louis Cludas; Fred Everett Harvey. NILES—Edward Jacob Haerle; *Henry* T. Haerle. *TESCOT—Earl* LeRoy Vermillion.

Pawnee County

GARFIELD—Charles C. Wolcott.

Pottawatomie County

BELVUE—Oscar R. Searl. HAVENSVILLE—James Edward McManis. ONAGA—Christian H. Koentz. ST. GEORGE—Charles Sumner Fry. WAMEGO—Guy Alpin Finney.

Pratt County

COATS—John Ross Campbell. IUKA—Shirley Francis Boyce. PRATT—Herbert Atkins; *James Addison Hockaday.* PRESTON—William Grant McManess.

Reno County

HAVEN—Walter H. Kirkpatrick. HUTCHINSON—*Lloyd Andrews* Clary; Clarence Walter Hall; Walter Newton Mundell; Herbert Livingson Scales; Newton Alfred Seehorn. LANGDON—James Bonner Ungles. *PRETTY PRAIRIE*—Ralph Walter Springer; Edgar Clarence Taylor.

Republic County

SCANDIA—Charles Victor Haggman; Roscoe C. Ward.

Rice County

FREDERICK—*Melvin C. Martin. STERLING—Marion* Trueheart.

Riley County

MANHATTAN—Robert R. Cave; William Andrew McCullough; Francis *Baldwin Sheldon.*

Rooks County

STOCKTON—Arthur B. Oechsli; Ernest Edward White.

Rush County

BISON—Norval William Robison. *LA CROSSE—Joseph Harrison Baker.* McCRACKEN—Willifred Page.

Russell County

LUCAS—Eugene A. Miller. RUSSELL—*Frederick Sears Hawes.* WALDO—*Henry* Samuel Dreher.

Saline County

SALINA—Jesse O. Dillon; Charles Mooney Fitzpatrick; John Wesley *Neptune; John DeWitt Riddell; Humah Horace* Wilson.

Scott County

SCOTT CITY—Mark Herbert Rhoads.

Sedgwick County

CLEARWATER—Solon C. Whitney. WICHITA—Perry M. Bell; William George Burton; William Theophilis Doherty; George Eugene Egloff; Earl Johnston Frost; William Priest Greening; Ralph Waldo Hissem; Earle Edward Hussey; Arthur Kelton Lawrence; Ronald Owen *Logsden;* Leon Matassarin; George William Matteson; Frank O. Miller; Walton I. Mitchell; Willard Alan Phares; George Kern Purves; James Glenn Rea; Henry Hutchinson Taggart; Wm. Otto Whitaker.

WICHITA—Gordon Wood Higginbotham.

Seward County

LIBERAL—Arthur Lewis Knisely; Roscoe Townley Nichols.

Shawnee County

TOPEKA—Charles Curtis Allen; George V. *Allen; Earle Godfrey Brown;* Charles Joseph Cahill; Ernest Dale Cook; Jesse Derickson Cook; John Adam Crabb; Albert Marcellus Dawson; Oscar Leonard Erickson; James Mahen Ernest Foy; Abram Robert Goodman; William Henry Greider; Seth A. Hammel; Charles Markham Hensley; Wilson Keith *Hobart; Charles Henry Lerrigo;* Claude C. Lull; Samuel Thomas Millard; Milton Bradford Miller; Ransley Jacob Miller; Orville Othello Moore; Leroy S. S. Ott; Arthur Kirk Owen; Henry S. Rogers; James Graves Stewart; John Lawrence Work. WAKARUSA—Charles Arthur Wyatt.

Sherman County

GOODLAND—Ernest Jones Beckner.

Smith County

ATHOL—Walter Claudius Keller.

Sumner County

BELLE PLAINE—Rinaldo Everett Baker; John Francis Rudolph. CALDWELL—David Edgar Kisecker; John Clinton McKinnan. GEUDA SPRINGS—Norman Bryce Fall. WELLINGTON—*Clyde Mansford Zink.*

Stafford County

HUDSON—Odus Liston. STAFFORD—James Amasa Hampton Webb.

Stevens County

HUGOTON—Ben Hill Day.

Thomas County

COLBY—William John Lowis.

Wabaunsee County

ALMA—George Wm. B. Beverly; Charles Harry Mielke. HARVEYVILLE—Louis Monroe *Tomlinson.*

Washington County

HADDAM—Charles Marion Swab. *PALMER*—Hugh Boggs Hawthorne. WASHINGTON—Henry D. Smith.

MORROWVILLE—Matthaus Henry Horn.

Wilson County

FREDONIA—Edgar Cecil Duncan. NEODESHA—Alexander Pount Williams.

Woodson County

NEOSHO FALLS—Stanton Albert McCool. TORONTO—*Cyrus Chadsey* Morrison.

Wyandotte County

KANSAS CITY—Alpheus J. Bondurant; Felix Cohen; Albert Porter Davis; Robert Crenshaw Davis; Dan Matthew Forbes; George M. Gray; John Franklin Hassig; Arthur Haislet Haynes; Frank Joseph *Hombach;* Mathew Henry Keefer; Harry Walter King; Roy Wilfred Layton; Lot Dalbert Mable; James Whittier May; Clyde Leon Morris; William Ballard Palmer; Julius Hyman Rabin; Thomas Richmond; William L. *Rhodes;* George Hewitt Smith; LaVerne B. Spake; Richard T. Speck; Edwin *Roy* Tenney. ROSEDALE—Howard Earl *Marchbanks;* Raymond Swinney *Wooldridge.*

KANSAS CITY—John Ellsworth Smith.

KENTUCKY STATE MEDICAL ASSOCIATION

Officers 1917-18

P. H. Stewart, President……Paducah
J. L. Barker, First Vice President……Pembroke
H. H. Stallard, Second Vice President……Pikesville
J. C. Douglas, Third Vice President……Franklin
A. T. McCormack, Secretary……Bowling Green
W. B. McClure, Treasurer……Lexington

Councilor District and Officers

First District.—Ballard, Caldwell, Calloway, Carlisle, Fulton, Graves, Hickman, Livingston, Marshall, Lyon, McCracken and Trigg counties. W. W. Richmond, Councilor, Clinton.

Second District.—Crittendon, Daviess, Hancock, Henderson, Hopkins, Muhlenberg, Union, Ohio, McLean, Breckenridge and Webster counties. D. M. Griffith, Councilor, Owensboro.

Third District.—Allen, Barren, Butler, Christian, Cumberland, Edmondson, Logan, Metcalf, Monroe, Simpson, Todd and Warren counties. Joseph N. McCormack, Councilor, Bowling Green.

Fourth District.—Bullitt, Grayson, Hardin, Henry, Larue, Meade, Hart, Nelson, Oldham and Shelby counties. C. Z. Aud, Councilor, Cecilian.

Fifth District.—Anderson, Boone, Carroll, Franklin, Gallatin, Jefferson, Owen, Spencer and Trimble counties. E. L. Henderson, Councilor, Louisville.

Sixth District.—Adair, Boyle, Green, Marion, Mercer, Taylor and Washington counties. R. C. McChord, Councilor, Lebanon.

Seventh District.—Casey, Clinton, Garrard, Lincoln, McCreary, Pulaski, Rockcastle, Russell and Wayne counties. A. W. Cain, Councilor, Somerset.

Eighth District.—Bourbon, Bracken, Fleming, Grant, Harrison, Jessamine, Kenton, Martin, Campbell, Mason, Nicholas Pendleton, Robertson, Scott and Woodford counties. J. E. Wells, Councilor, Cynthiana.

Ninth District.—Boyd, Carter, Elliott, Floyd, Greenup, Johnson, Lawrence, Lewis, Magoffin and Pike counties. J. W. Kincaid, Councilor, Catlettsburg.

Tenth District.—Bath, Breathitt, Clark, Estill, Fayette, Lee, Madison, Menefee, Montgomery, Morgan, Owsley, Powell, Rowan, Knott, Letcher, Perry and Wolfe counties. I. A. Shirley, Councilor, Winchester.

Eleventh District.—Bell, Clay, Harlan, Jackson, Knox, Leslie, Laurel and Whitley counties. J. S. Lock, Councilor, Barbourville.

KENTUCKY

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Adair	400	21.0	17,632	928	19	..	7	12	11	1
Allen	394	20.7	15,047	791	19	1	10	15	14	3
Anderson	201	15.5	10,215	785	13	1	5	11	8	2
Ballard	252	10.1	14,098	563	25	..	16	22	19	2
Barren	485	14.7	26,822	812	33	1	15	20	23	4
Bath	270	15.0	13,988	777	18	..	6	14	11	2
Bell	384	10.9	37,757	1,078	35	..	25	32	13	2
Boone	251	10.9	9,420	409	23	..	9	15	11	1
Bourbon	304	7.8	17,462	447	39	2	12	28	14	2
Boyd	159	4.1	26,809	687	39	1	13	20	26	4
Boyle	186	9.3	15,289	764	20	..	8	14	14	1
Bracken	204	10.2	10,308	515	20	..	5	12	6	1
Breathitt	483	37.1	19,890	1,530	13	..	12	12	7	3
Breckinridge	568	18.3	21,299	690	31	..	16	20	17	4
Bullitt	303	25.7	9,487	790	12	..	5	6	6	2
Butler	417	34.7	15,805	1,317	12	..	4	6	5	..
Caldwell	322	14.0	14,063	611	23	..	13	17	14	2
Calloway	412	12.9	21,497	671	32	2	16	23	18	..
Campbell	145	2.1	63,126	928	68	5	32	52	51	12
Carlisle	198	11.0	9,018	503	18	1	8	13	12	2
Carroll	132	8.8	8,110	540	15	..	4	11	9	4
Carter	413	24.3	23,236	1,366	17	..	8	13	13	..
Casey	379	34.4	15,725	1,429	11	..	5	13	8	1
Christian	725	10.3	39,489	564	70	1	32	49	46	9
Clark	265	7.0	18,931	498	38	..	23	33	28	5
Clay	478	4.0	19,558	1,629	12	..	4	9	5	3
Clinton	233	33.3	8,358	1,194	7	..	4	5	4	..
Crittenden	391	30.1	13,296	1,022	13	..	2	8	8	1
Cumberland	387	25.8	10,490	699	15	..	7	10	6	..
Daviess	478	5.7	42,736	514	83	1	36	56	57	7
Edmonson	308	77.0	10,757	2,189	4	..	1	3	..	..
Elliott	263	43.8	9,814	1,635	6	..	2	5	2	..
Estill	254	25.4	12,713	1,271	10	..	6	8	5	1
[1]Fayette	269	2.2	51,834	431	120	6	69	83	65	17
Fleming	325	13.0	16,066	642	25	..	6	13	18	..
Floyd	399	16.6	20,865	869	24	..	14	22	8	4
Franklin	199	5.7	21,341	609	35	1	17	25	22	3
Fulton	193	6.2	15,988	515	31	..	15	22	18	6
Gallatin	109	12.1	4,697	521	9	1	2	5	4	1
Garrard	237	15.8	11,894	792	15	..	8	12	12	4
Grant	261	10.1	10,581	423	25	..	12	13	10	1
Graves	551	10.4	33,784	637	53	1	23	37	36	9
Grayson	497	19.9	20,016	800	25	..	11	17	16	1
Green	279	31.0	11,871	1,319	9	..	1	7	6	1
Greenup	346	18.2	20,695	1,089	19	..	9	13	10	3
Hancock	193	24.1	8,512	1,064	8	..	6	7	4	..
Hardin	606	15.1	22,696	567	40	..	14	24	23	2
Harlan	478	31.9	11,096	739	15	..	12	15	15	2
Harrison	311	9.4	16,873	511	33	2	16	24	22	4
Hart	430	19.5	18,173	826	22	2	7	11	13	2
Henderson	435	10.1	29,352	682	43	1	22	32	28	4
Henry	303	10.1	13,716	457	30	..	11	20	16	2
Hickman	225	15.0	11,752	783	15	..	7	12	9	3
Hopkins	546	9.7	36,696	667	55	1	25	39	25	6
Jackson	333	47.5	10,859	1,551	7	..	2	7	5	1
[2]Jefferson	387	0.6	285,089	436	653	16	479	519	278	130
Jessamine	172	90.5	13,115	690	19	..	7	13	10	1
Johnson	268	12.2	20,220	919	22	..	16	19	13	1
[3]Kenton	163	1.7	75,203	776	97	3	39	68	54	15
Knott	348	116.0	12,312	4,104	3	..	4	3	2	..
Knox	356	11.5	25,577	825	31	..	10	16	15	2
Larue	288	20.6	10,701	764	14	..	4	8	8	2
Laurel	447	24.8	21,536	1,196	18	..	8	15	12	3
Lawrence	422	18.3	20,399	886	23	..	10	17	13	2
Lee	199	19.9	10,656	1,065	10	..	7	9	6	1
Leslie	373	124.3	10,598	3,532	3	..	2	3	2	..
Letcher	355	20.9	11,682	687	17	..	11	17	13	..
Lewis	491	40.9	16,887	1,407	12	..	8	11	9	2
Lincoln	338	14.1	18,508	771	24	1	11	16	10	2
Livingston	392	23.0	10,627	625	17	..	9	15	12	1
Logan	643	17.4	24,977	675	37	1	13	26	22	3
Lyon	277	34.6	9,498	1,187	8	..	2	4	8	1
McCracken	239	4.0	39,685	661	60	1	33	51	31	11
McCreary	490	49.0	8,000	800	10	..	8	9	8	1
McLean	253	21.1	13,818	1,151	12	..	7	10	10	1
Madison	446	11.1	27,931	698	40	1	19	32	19	4
Magoffin	302	33.5	11,857	1,650	9	..	7	7	6	1
Marion	345	15.7	16,359	743	22	1	9	14	19	4
Marshall	327	14.2	17,287	751	23	..	11	17	19	2
Martin	2 2	44.1	8,394	1,678	5	..	2	4	2	..
Mason	227	7.6	18,611	620	30	1	16	23	20	4
Meade	301	25.1	9,783	815	12	..	3	7	6	1
Menifee	203	50.7	6,153	1,538	4	1	1	4	4	..
Mercer	253	10.5	11,063	585	24	..	13	20	19	4
Metcalf	303	20.2	10,792	719	15	..	5	7	11	1
Monroe	441	24.5	14,108	783	18	..	10	13	10	2
Montgomery	198	7.6	12,892	111	26	..	10	15	15	2
Morgan	365	26.1	18,789	1,342	14	..	8	10	4	..
Muhlenberg	472	11.5	31,332	837	41	..	22	28	25	7
Nelson	411	17.9	17,006	739	23	..	6	12	16	2
Nicholas	208	10.9	10,601	557	19	..	7	14	13	..
Ohio	584	17.7	27,902	845	33	..	16	22	17	5
Oldham	180	16.4	7,371	670	11	..	4	4	9	2
Owen	367	19.3	14,248	741	19	..	7	12	7	2
Owsley	216	54.0	8,784	2,196	4	..	2	4	4	..
Pendleton	279	12.7	11,985	544	22	1	8	16	15	5
Perry	335	17.6	13,429	706	19	1	13	18	16	5
Pike	779	25.1	38,243	1,233	31	..	17	29	17	6
Powell	181	25.8	6,268	895	7	..	5	6	6	1
Pulaski	779	26.0	38,110	1,270	30	..	17	25	17	5
Robertson	109	13.6	4,121	515	8	..	4	6	4	2
Rockcastle	310	23.8	15,972	1,228	13	..	7	10	11	1
Rowan	272	24.7	10,285	935	11	..	5	8	6	1
Russell	329	29.9	11,712	1,064	11	..	4	11	9	..
Scott	289	11.1	16,956	6,521	26	..	7	16	17	2
Shelby	427	12.5	18,041	530	34	..	13	21	17	2
Simpson	216	10.8	11,460	573	20	..	5	14	12	3
Spencer	186	13.3	7,692	548	14	..	9	9	5	..
Taylor	279	16.4	12,608	741	17	..	9	12	11	2
Todd	367	14.7	16,488	659	25	1	9	20	12	3
Trigg	428	26.7	14,878	929	16	..	6	14	7	1
Trimble	154	22.0	6,512	930	7	..	3	5	1	..
Union	325	12.0	19,886	736	27	..	21	22	17	2
Warren	530	7.6	31,023	443	70	3	24	46	47	17
Washington	299	15.7	13,910	733	19	..	9	18	17	4
Wayne	590	42.1	18,434	1,316	14	..	5	8	11	..
Webster	341	9.8	21,614	617	35	..	13	27	9	..
Whitley	585	17.2	31,366	922	34	..	22	26	22	5
Wolfe	230	23.0	10,665	1,066	10	..	3	4	5	..
Woodford	195	9.7	12,571	628	20	..	9	17	11	2
Totals	40,661	11.7	2,425,466	696	3,483	63	1,801	2,587	1,953	439

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1. Includes Lexington, population 39,703; physicians 115 [M.R.C. 16].
2. Includes Louisville, population 237,012; physicians 610 [M.R.C. 131].
3. Includes Covington, population 56,520; physicians 78 [M.R.C. 13].

HONOR ROLL

Adair County

COLUMBIA—Oliver Patterson Miller.

Allen County

ALLEN SPRINGS—Logan Mitchell Weaver. HOLLAND—John Wilson White. NEW ROE—Wilson Lewis Vickers. SCOTTSVILLE—William Allen Callis; Hubert Marvin Meredith.

Anderson County

LAWRENCEBURG—Charles William Kavanaugh; Asa Caperton Overall.

Ballard County

KEVIL—George E. Aubrey. LA CENTER—John Francis Hahs.

Barren County

GLASGOW—Carl Clifford Howard; Thomas Finlie Miller; Stonewall Jackson Smock. HITESVILLE—Guy David Griggs.

Bath County

OWINGSVILLE—Joseph Scott Goodpaster. SALT LICK—Homer Leo Nickell.

Bell County

MIDDLESBORO—Thomas Bell; Timothy Thomas Gibson.

Boone County

FLORENCE—Jack Henry Grant.

Bourbon County

CLINTONVILLE—William Clinton Worthington. PARIS—Milton Jacob Stern.

Boyd County

ASHLAND—Albert Curtis Bond; Smithfield Keffer; Porter Campbell Layne; John Wesley Stephenson.

Boyle County

JUNCTION CITY—Herbert Strickle Chase.

Bracken County

AUGUSTA—Charles Rothe Rice.

Breathitt County

JACKSON—Luther Bach; Overton Hobart Swango.
QUICKSAND—Berton Milton Brown.

Breckenridge County

HARNED — Earl Moorman. IRVINGTON — Lon Beckwith Moremen. McQUADY—William Wallace Martin. WESTVIEW—John Alvin Biggers.

Bullitt County

LEBANON JUNCTION—Otto Earle Johnson. SHEPHERDSVILLE—Samuel Woodford Bates.

Caldwell County

PRINCETON—John Richard Jones; Richard Woods Ogilvie.

Campbell County

ALEXANDRIA—Clayton Whittemore Shaw. NEWPORT—William Wesley Anderson; Elmore Bernard Backsman; Shaler Berry; Clay Crawford; Walter Brooks Hughes; William Arnold Kreiger; John Linton Phythian; Frederick Carl Weber. DAYTON—Humphrey Newton Ervin. FORT THOMAS—James A. Robertson. GRANTS LICK—Otto Philips Hodge.

Carlisle County

BARDWELL—Hazel Petrie Mosby. CUNNINGHAM—Dupe Senter Robertson.

Carroll County

CARROLLTON—Will Lee Calvert; John Maxwell Ryan; John P. Wheeler; Benjamin Logan Holmes.

Casey County

MINTONVILLE—Hugh Frank Taylor.

Christian County

HOPKINSVILLE—Randolph Dade; Urey Guess Davis; Otis Fillmore Miller; Charles Arthur Robinson; Robert Lee Woodard. PEMBROKE—Joe L. Barker; Irl Thomas.
HOPKINSVILLE—Bankie Oliver Moore.
EDGOTEN—Stanley Edward Stroube.

Clark County

RIGHT ANGLE—John Anderson Snowdon. WINCHESTER—Enoch Robinson Bush; Nathan Feld; David Howard McKinley.
WINCHESTER—Benj. A. Cockrell.

Clay County

BIG CREEK—Carlo B. Marcum. CHESTNUTBURG—James Madison Morris. MANCHESTER—James Gordon Bentley.

Crittenden County

TOLU—Ollie Thomas Lowery.

Daviess County

MACEO—Richard M. Taylor. OWENSBORO—William J. Froitzheim; Virgil A. Harl; Isaac Jones Hoover; Robert Lockhart; Charles C. Phillips. PLEASANT RIDGE—Zebulon Hamilton Shultz.

Estill County

RAVENNA—Richard Raymond Snowden.

Fayette County

LEXINGTON—Percy McGee Alexander; David Barrow; Walter Overton Bullock; Robert Milligan Coleman; Walter Cox; Robert Julian Estill; Charles Crain Garr; Samuel Backburn Marks; Julian Turnbull McClymonds; Jackson Egbert Million; William Dandridge Reddish; Orrin Leroy Smith; Benjamin Franklin Van Meter; Clifton Brooks Willmott; George Hancock Wilson; Walter Simrall Wyatt. MILL SPRINGS—Oliver Hazard Perry Parrigin.

Floyd County

ALLEN—Harry Hampton Mayo. AUXIER—Ernest Elmo Archer. SMALLEY—Edward Stumbo. THOMAS—Hiram Clinton Bevins.

Franklin County

FRANKFORT—James Wallace Hill; Joseph Allen Sleet; Albert Stewart.

Fulton County

FULTON—Henry Tablor Alexander; John Marshall Alexander; George Anderson Crafton; Horace Luten. HICKMAN—James McConnell Hubbard; Hugh Edward Prather.

Gallatin County

WARSAW—Cornelius Howard Duvall.

Garrard County

LANCASTER—John Milton Acton; Virgil Gibney Kinnaird. MARCELLUS—Samuel J. Rose. PAINT LICK—William L. Carman.

Grant County

CORINTH—William Perry Foreman.

Graves County

BOAZ—Edward Adams. LYNNVILLE—Nona Bybe Ellis. MAYFIELD—Garnett B. Belote; John Ray Pryor; John G. Puryear. PRYORSBURG—Yandell Young Miller. SEDALIA—Marion W. Page. SYMSONIA—Earle Edwin Smith. WINGO—Stanley Mullins.

Grayson County

CANEYVILLE—Robert Lee Glascock.

Green County

WEBBS—James Clarence Graham.

Greenup County

GREENUP—James Davis Biggs; Samuel Clemens Smith. RUSSELL—Charles Edward Vidt.

Hardin County

ELIZABETHTOWN—Franklin P. Strickler Jr. VINE GROVE—Edwin Wallace Montgomery.

Harlan County

WALLINS CREEK—William Knott Howard. WHITE STAR—Oliver Perry Henry.

Harrison County

BERRY—Lawrence Newton Todd. CYNTHIANA—Havlland Carr; Rountree Wickliffe Wood. SUNRISE—Grover Athey Beckett.

Hart County

HARDYVILLE—William Adair Weldon. HORSE CAVE—Harry Price Honaker.

Henderson County

BASKETT—John Rodger Hodges. HENDERSON—William Bennett Negley; William W. W. Wilson; Malcom Hodge Yeaman.

Henry County

LOCKPORT—William W. Leslie. NEW CASTLE—John Thomas McDonald.

Hickman County

CLINTON—Charles Hunt; William Ferguson Peebles. COLUMBUS—James Walter McPheeters.

Hopkins County

DANIEL BOONE—Marvin Speed Veal. EARLINGTON—William K. Nisbet; Amplias Owen Sisk. MADISONVILLE—James D. Sory; Robert Sory. MORTONS GAP—Amplias Warrick Davis.

Jackson County

BOND—Henry Anderson Hughes.

Jefferson County

ANCHORAGE—J. VanD. Bedinger; Henry Ditto Berryman. JEFFERSONTOWN—Emory Law Dravo; John Rod Shacklette.

LOUISVILLE—Carl Edwin Abel; Irvin Abell; Dallas E. Abraham; Walter Scott Adams; Calvin Garnett Arnold; Isaac Albert Arnold; Francis G. Aud.

Albert Leonard Bass; Everett Russell Bailey; Ashton Morrow Baldwin; Edward Willard Bates; George Phillip Bentel Jr.; Maurice Albert Blackburn; Oscar Edgworth Bloch; Milton Board; Judson Powell Boulware; Horace S. Brannon; William Thomas Bruner; Theodore LeGrande Burnett; Coleman Craig Burns; Thomas Langford Butler.

Benj. D. Choate; Samuel Clarence Clowney; Thomas Read Collier; James Ruffin Cottell; Joseph Franklin Cook; Walter Legier Coolidge; Dallis Lowell Cornwell.

George Hanlon Day; William Brown Doherty Jr.; Henry Hunt Duke; Ellis Duncan; George F. Dwyer.

Louis Reuben Edleson; Hiram Simm Eggers; Lee Joseph Ernstberger.

Charles Farmer; Morris Flexner; John Bunyan Floyd; Frank Thomas Fort; Louis Wallace Frank.

John William Galvin; Charles Meredith Garth; Arthur Ouchterlony Goodman; Walter Bourne Gossett; Ernest Owsley Grant; Guy Parkham Grigsby; Frederick Grunwald; Alfred Kellond Gymer.

Ferdinand Herbert Haessler; Thomas Harris Hale; John M. Hammons; Jethra Hancock; Granville Scott Hanes; Desha H. Harris; Elmer Lee Henderson; Michael Joseph Henry; Charles W. Hibbitt; David L. Hill; Albert Earle Holmes; Emmet Field Horine; Charles John Hufnagel.

John Broadus Jameson; Charles William Jefferson; Griffin Clinton Kelly; Frederick Luther Koontz.

Irvin Linderberger; Charles George Lucas; James Sharp Lutz.

Mehron Haroutyoun Mathesian; William Eli McCormack; Stephen Clifford McCoy; Walter Felix McCrocklin; George Martin McLeish; Lewis S. McMurtry; Victor Newcomb Meddis; Sidney Johnston Meyers; Orville R. Miller; John James Moren; John Welsh Moss.

Lamar William Neblett; Richard Willis Oliver; Robert Lee Oliver; Ernest G. Overby; Evan Ellis Owen.

Albro L. Parsons; James Royden Peabody; Harry Lewis Pelle; A. C. L. Percefull; Charles Barker Petrie; Everett Layton Pirkey; Marion Ely Pirkey; Robert Tilford Pirtle; John Williamson Price Jr.; James Henry Pritchett; Drue McBride Purdom.

Ermin Levi Ray; Cleves Richardson; John Breckinridge Richardson Jr.; George Angus Robertson; John Clayton Rogers; Louis Carlisle Rudell.

Herbert Eldredge Schoonover; Jacob Patrick Shacklett; Roy Adeson Shell; Joseph Garland Sherrill; Virgil E. Simpson; Edwin Dargan Smith; Albert Lee Spaulding; Samuel Everett Stanley; William Calhoun Stirling Jr.

Grover C. Todd; Royal Bridges Tracy; John Barnard Voor; Allen H. Walker; Franklin Maran Walker; William Morris Watkins; John Henry Williams; Dunning S. Wilson; Karl David Winter; Waldorf H. Witherspoon; Harry Clanton Woodard; George Hardin Yenowine.

LOUISVILLE—Simrall Anderson; Calvin N. Caldwell; John Wesley Dyer; Jordan Bourne Hankal; Floyd Vern Kilgore; George Milton Shaunty; Llewellyn Powell Spears; William Claybourne White.

SHIVELY—Alfred Harris Kelly.
SOUTH PARK—Charles Penual Harrod.
WAVERLY HILL—Don P. Claypool; Eugene McD. Traubue.

Jessamine County

NICHOLASVILLE—Marvin Chester Pentz.

Johnson County

DENVER—David Harmon Daniel.

Kenton County

COVINGTON—Samuel David Cohen; William Guy Eckman; Clifford Newell Heisel; George Golden Hunter; Thomas Henshaw Kelly; Frank Edward Miller; Thomas Hayden Nelson; Edgar William Northcutt; Willoughby Heath Ranshaw; James Andrew Ryan; Theodore Sallee; James Martin Staughton; Frederick Isaiah Yates. LUDLOW—Harry Elliott McCord; Charles Wilbur Stroup.

Knox County

BARBOURVILLE—Leslie Logan. FOUNT—Seymour Hopper Rowland.

Larue County

BUFFALO—Isaac Leonard Wyatt. HODGENVILLE—Albert Loeb Solomon.

Laurel County

LONDON—Oscar D. Brock; James Boyd Mason.
ATLANTA—John LaFayette Stillings.

Lawrence County

BUSSEYVILLE—Joe Crislys Bussey. CHARLEY—Leslie Scott Hayes.

Lee County

BEATTYVILLE—John Harney Evans.

Lewis County

GARRISON—Arthur Carter Henthorn. VANCEBURG—Charles L. Graham.

Lincoln County

McKINNEY—James Britton Smith. MORELAND—Mastin Lee Pipes.

Livingston County

SALEM—John Luke Hayden.

Logan County

AUBURN—James B. Helm. LEWISBURG—Logan Felts. RUSSELLVILLE—Walter Byrne Jr.

Lyon County

KUTTAWA—Thomas Lowery Phillips.

Madison County

BEREA—Albert Franklin Cornelius; Lemuel Jones Godbey. RICHMOND—George Wilmer Pugh; Charles A. Tutt.

Magoffin County

SALYERSVILLE—Roscoe C. Adams.

Marion County

BRADFORDSVILLE—Eugene F. Beard. GRAVEL SWITCH—Thomas Irvine Campbell. LEBANON—Charles Bismarck Kobert. RAYWICK—Oldron A. Mitchell.

Marshall County

BENTON—Lawrence Lee Washburn. CALVERT—William Thomas Little.

Mason County

MAYSVILLE—John Daniel Grant; Samuel Richard Harover; Charles William McClanahan. WASHINGTON—Washington Irvin Berry.

McCracken County

HEATH—Charles Clinton Morris. PADUCAH—Vernon Blythe; Van John Davis; Royal William Grubbs; Clifford E. Harkey; Frederick Adryan Hoyer; Elbert William Jackson; Walter Adair Lackey; Samuel B. Pulliam; Philip Henry Stewart; Edward Burnett Willingham.

McCreary County

FLAT ROCK—Charles Valentine Gibson.

McLean County

CALHOUN—Paul Dame Moore.

Meade County

BRANDENBURG—Eugene Campbell Hartman.

Mercer County

HARRODSBURG—William Bell Goddard; Carroll Porteus Price; John Thomas Price; John Burton Robards.

Metcalfe County

EDMONTON—Perry Wycliffe Bushong.

Monroe County

STRODE—Eugene Ellsworth Palmore. TOMPKINSVILLE—Richard F. Duncan.

Montgomery County

MT. STERLING—David Hardman Bush; Owen Breckinridge Demaree.

Muhlenberg County

CENTRAL CITY—Floyd K. Foley; Septimus Theo. Taylor; Clarence Woodburn. DUNMOR—Charles Henry Haberer. GRAHAM—John Henry Harralson. GREENVILLE—Claude Wilson; Edmund Reno Yost.

Nelson County

COX'S CREEK—John Breckenridge Overall. NEW HOPE—Rodman Hiner Williams.

Ohio County

CROMWELL—Oscar Allen; Henry Smith. DUNDEE—James Derelder Stewart. FORDSVILLE—Clarence DeWeese. HARTFORD—Augustus Baxter Riley. ROCKPORT—Frank Brannon DeWitt.

Oldham County

LA GRANGE—Harry Berkley Blaydes; Richard Morris Goldsborough.

Owen County

NEW LIBERTY—George Purdy. OWENTON—John Hall Chrisman.

Pendleton County

BUTLER—John Elmer Wilson. DE MOSSVILLE—Harry Fiske Mann. FALMOUTH—William Andrew McKenney; Lew G. Wallace; Kirtley Benton Woolery.

Perry County

BUCKHORN—Zachry M. Abshar; Samuel Marcellus Richie. HAZARD—Robert Lee Collins; Thomas Cole Holloway. STAUB—William Edward Ray.

Pike County

HELLIER—[illegible] Preston. McVEIGH—Marshall Abner Moore. [illegible] rne. PIKEVILLE—Solomon B. Casebolt. [illegible] STONE—Lawrence Francis Boland.

Powell County

CLAY CITY—Robert Andrew Irvin.

Pulaski County

SOMERSET—Edward Thomas Gallagher; Thomas Robbin Griffin; Robert Fulton Jasper; Carl Norfleet; Sam Fletcher Parker.

Robertson County

BRATTON—James McKinley Stevenson. MT. OLIVET—Harlan G. Claypoole.

Rockcastle County

LIVINGSTON—Eva Walter Walker.

Rowan County

MOREHEAD—Frederick Kellum Blair.

Scott County

GEORGETOWN—Edward C. Barlow; Robert William Porter.

Shelby County

FINCHVILLE—William Harman Nash. SHELBYVILLE—Adriel Clark Weakley.

Simpson County

FRANKLIN—Samuel Richard Guthrie; Charles Lee Venable; Notley Conn Witt.

Taylor County

CAMPBELLSVILLE—Frank Ingram Buckner; Hugh Harding Richeson.

Todd County

ALLENSVILLE—John Lee Farmer. KIRKMANSVILLE—Hylan Hale Woodson. TRENTON—Charles Mathew Gower..

Trigg County

CADIZ—Leonard Champion.

Union County

MORGANFIELD—David Cummins Donan Jr. STURGIS—Claude Bertram Neldhamer.

Warren County

BOWLING GREEN—John H. Blackburn; Phillip Earle Blackerby; Charles Conrad Buford; Frederick D. Cartwright; Dalferes Pennington Curry Jr.; Zachariah Carton Jones; Arthur Thomas McCormack; Robert Benjamin Morris; Morton M Moss; William Hal Neel; Ernest Rau; Eldon Wright Stone; Burnett W. Wright.

OAKLAND—Adair Wayne White. ROCKFIELD—Robert Carlisle Moss. SMITHS GROVE—James Anderson Grider. WOODBURN—Bonaparte P. Davis.

Washington County

SPRINGFIELD—E. C Brandon; Garland Withers Hill; Meredity Woodson Hyatt; John Wilson McElroy.

Whitley County

CORBIN—William Moss Cox. LOT—John E. Siler. SILER—Lee Rose. WILLIAMSBURG—Clive Arthur Moss; Lorenzo Oscar Smith.

Woodford County

MIDWAY—Sidney J Anderson.
VERSAILLES—Smith Alford Blackburn.

LOUISIANA STATE MEDICAL SOCIETY

Officers 1917-18

Clarence Pierson, President	Jackson
T. H. Watkins, First Vice President	Lake Charles
A. Henriques, Second Vice President	New Orleans
J. M. Mosely, Third Vice President	Arcadia
L. R. De Buys, Secretary-Treasurer	New Orleans

Councilor Districts and Officers

First Congressional District.—W. H. Knolle, Councilor, New Orleans.

Second Congressional District.—Jefferson, St. Charles, St. James and St. John parishes. Homer Dupuy, Councilor, New Orleans.

Third Congressional District.—Assumption, Iberia, Lafayette, Lafourche, St. Martin, St. Mary, Terrebonne and Vermilion parishes. J. W. K. Shaw, Councilor, New Iberia.

Fourth Congressional District.—Bienville, Bossier, Caddo, De Soto, Natchitoches, Red River, Sabine, Webster and Winn parishes. H. H. Smith, Councilor, Cotton Valley.

Fifth Congressional District.—Caldwell, Catahoula, Claiborne, Concordia, East Carroll, Franklin, Jackson, La Salle, Lincoln, Madison, Morehouse, Ouachita, Richland, Tensas, Union and West Carroll parishes. O. W. Cosby, Councilor, Monroe.

Sixth Congressional District.—Ascension, Iberville, East Baton Rouge, *East Feliciana, Livingston, Pointe Coupee, St. Helena, St. Tammany,* Tangipahoa, Washington, West Baton Rouge and West Feliciana parishes. J. J. Robert, Councilor, Baton Rouge.

Seventh Congressional District.—*Acadia, Avoyelles,* Calcasieu, Cameron, Grant, Rapides, St. Landry and Vernon parishes. C. A. Gardiner, Councilor, Sunset.

Eighth Congressional District.—E. Lee Henry, Councilor, Lecompte.

HONOR ROLL

Acadia County

CHURCHPOINT—Harry Jenkins.

Allen County

ELIZABETH—Charles L. Gaulden; Harold Dean Van Schaick. OAKDALE—Alonzo Trent Palmer. WARD—Grover Grady Whitley.

Ascension County

ACY—Dawson Telesphere Martin. GONZALES—George Buckner LeSueuer. *HOPE VILLA*—Leslie Wallace Dixon.

Assumption County

NAPOLEONVILLE—William Whitmell Pugh.

Avoyelles County

BUNKIE—David Benjamin Davis. EVERGREEN—William Powell Buck Jr. MANSURA—Kirby Arthur Roy.

Beauregard County

DE RIDDER—John David Frazar; Robert L. McMahon; Spears Owen Turner. LONGVILLE—Erasmus L. Miller. MERRYVILLE—Robert Edward Windham.

Bienville County

ALBERTA—Edward *Everette Archibald.*

Bossier County

ALLENDALE—Walter Prescott Lambeth. BOSSIER—Alaric Claudius Whittington. ELM GROVE—Harper Leonidas Crow. TAYLORVILLE—Eugene Ernest Simpson.

Caddo County

BELCHER—Walter Ford Henderson. BLANCHARD—Howard P. Doles. HOSSTON—Matthias Mills Collins.

SHREVEPORT—Wiley Hugh Billingsley; George William Burchfield; George Bennet Dickson; Clarence Bartel Erickson; Francis Scrimzeous Furman; Broox Cleveland Garrett; Arthur G. Heath; Randall Hunt; Walter Benjamin Hunter; Thomas Peterson Lloyd; Jamison Cottrell Mills; Cornelius Pearl Munday; Pope Webb Oden; *Walton Peter* Prudhomme; Thomas Ragan; George Allen Ramsey; Isidore Barthelmie Rougon; Clifford Phillip Rutledge; Harry Walker Scofield; William Wallace; James Clinton Willis Jr.; Wiltz M. Ledbetter.

Calcasieu County

LAKE CHARLES—*Louis Zelick* Kushner; John G. Martin. SULPHUR—Rufus H. Fisher; Samuel Benson Lyons.

Caldwell County

CLARKS—Brinsfield King; Dollie O. Sherman. KELLY—Thomas Byron Cracraft.

LOUISIANA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Acadia	647	20.9	37,953	1,224	31	..	12	17	12	1
Allen	705	25.2	14,139	504	28	..	18	27	13	4
Ascension	291	17.1	23,887	1,405	17	..	9	14	5	3
Assumption	484	44.0	25,950	2,359	11	..	7	9	3	1
Avoyelles	847	20.7	37,315	910	41	1	10	33	8	3
Beauregard	1,100	37.9	19,589	675	29	..	23	29	13	5
Bienville	848	32.6	24,833	955	26	..	12	21	8	1
Bossier	863	47.9	21,738	1,207	18	..	11	16	14	4
[1]Caddo	880	6.7	68,200	520	131	2	89	116	79	25
Calcasieu	3,650	89.0	31,974	779	41	..	15	35	18	4
Caldwell	531	48.3	9,816	892	11	2	7	7	9	3
Cameron	1,501	375.2	4,534	1,167	4	..	1	2	..	..
Catahoula	718	71.8	11,745	1,174	10	..	6	8	..	..
Claiborne	778	33.8	26,525	1,153	23	..	13	19	20	3
Concordia	714	71.4	14,803	1,480	10	..	9	9	4	2
De Soto	872	27.2	29,606	925	32	..	18	27	15	1
E. Baton Rouge	455	9.9	37,082	806	46	..	25	39	30	8
East Carroll	420	70.0	11,831	1,971	6	..	..	5	2	1
East Feliciana	464	21.1	20,055	911	22	1	9	17	14	5
Evangeline	790	7.2	21,516	1,956	11	..	7	8	5	..
Franklin	530	27.9	14,251	750	19	..	13	18	9	1
Grant	683	35.9	18,188	957	19	..	13	19	4	4
Iberia	589	32.7	32,901	1,827	18	..	12	12	11	3
Iberville	584	25.4	33,836	1,427	23	..	14	15	12	2
Jackson	602	30.1	17,248	862	20	..	10	16	14	4
Jefferson	425	53.1	20,382	2,547	8	..	5	7	3	1
Jefferson Davis	580	24.2	20,671	861	24	2	15	19	8	3
Lafayette	279	7.7	33,045	917	36	..	18	29	10	1
Lafourche	991	47.2	36,197	1,723	21	..	9	18	9	1
La Salle	640	53.3	10,602	883	12	..	8	10	3	1
Lincoln	472	20.5	20,375	885	23	..	12	21	10	2
Livingston	662	94.6	12,471	1,781	7	..	5	6	3	..
Madison	650	130.0	10,676	2,135	5	..	2	3	2	..
Morehouse	831	39.5	20,357	969	21	..	13	16	11	..
Natchitoches	1,289	32.2	38,820	970	40	..	26	34	9	2
[2]Orleans	200	0.32	377,010	612	616	11	421	587	372	135
Ouachita	642	16.0	29,394	734	40	2	26	34	25	5
Plaquemines	1,005	91.4	12,524	1,138	11	..	8	9	5	2
Pointe Coupee	576	38.4	25,289	1,685	15	1	9	9	11	2
Rapides	1,370	19.8	48,172	698	69	1	47	59	44	8
Red River	400	44.4	11,402	1,266	9	..	7	7	5	..
Richland	565	24.6	19,165	833	23	..	14	16	16	3
Sabine	1,020	56.7	23,125	1,284	18	..	15	17	10	..
St. Bernard	616	308.0	5,457	2,728	2	..	..	2	..	1
St. Charles	295	42.1	12,764	1,823	7	..	5	6	2	1
St. Helena	420	70.0	9,677	1,612	6	..	5	5	1	..
St. James	254	14.9	25,061	1,474	17	..	11	13	5	..
Saint John the Baptist	231	23.1	15,802	1,580	10	..	6	7	6	..
St. Landry	1,645	32.2	55,186	1,082	51	1	21	43	22	2
St. Martin	525	40.4	26,083	2,006	13	..	8	9	..	1
St. Mary	632	19.7	43,181	1,349	32	..	20	27	6	2
St. Tammany	706	29.4	22,990	957	24	..	16	22	13	2
Tangipahoa	790	23.2	37,579	1,105	34	..	19	27	7	2
Tensas	632	57.4	17,060	1,550	11	..	8	10	5	3
Terrebonne	1,756	125.4	31,133	2,223	14	..	12	13	4	1
Union	918	45.9	21,860	1,093	20	..	14	14	4	1
Vermilion	1,213	50.5	30,538	1,272	24	..	20	20	6	2
Vernon	1,367	65.1	22,534	1,073	21	..	12	19	12	3
Washington	655	24.1	25,643	1,114	23	..	14	23	6	3
Webster	609	24.9	22,149	922	24	..	15	20	12	1
W. Baton Rouge	214	30.6	14,352	2,050	7	..	4	5	2	1
West Carroll	366	33.3	8,120	735	11	..	10	10	1	..
West Feliciana	352	39.1	13,449	1,494	9	..	5	9	3	..
Winn	969	48.4	24,714	1,235	20	..	12	17	7	1
Totals	48,613	24.0	1,864,534	920	2,025	24	1,259	1,760	1,002	281

1. Includes Shreveport, population 37,064; physicians 95 [M.R.C. 22].
2. Includes New Orleans, population 377,010; physicians 617 [M.R.C. 136].

Claiborne County

ATHENS—William L. Atkins. HOMER—William Lemos Stone; Joel Aylcus Wilkinson.

Concordia County

FERRIDAY—Victor Wiley Maxwell. SHAW—John Luther Pittman.

De Soto County

PELICAN—James Crowe Burdette.

East Baton Rouge County

BATON ROUGE—*Raymond* M. Baranco; Thomas J. McHugh; John *Robert*; McKowen; Charles McVea; Thomas C. Paulsen; James Jehu James Arthur *Tucker*; Edwin Vignes Whitaker.

East Carroll County

LAKE PROVIDENCE—William Hugh Hamley.

East Feliciana County

JACKSON—Theophilus Watkins Evans; Jesse Worthy Lea; Edwin Mayer Levy; Ralph C. P. Truitt. NORWOOD—Christopher Ludwig Mengis.

Franklin County

GILBERT—Denson Gill.

Grant County

COLFAX—John Cecil Chapman; Charles Walter Phillips; William Job Roberts. SELMA—Isaac Newton Adams

Iberia County

JEANERETTE—Michel Fausti Morvant. NEW IBERIA—Enoch Spencer Fulton; Thomas Lee Welc

Ibervill County

PLAQUEMINE—Adrian A. Landry WHITE CASTLE—Whyte Glendower Owen.

Jackson County

EROS—Joseph Luther Ewing. HODGE—Charles *Hodge Mosely*. JONESBORO — Edwin Caldwell Simonton. JONESVILLE — Edward Rhinehart Yancey.

Jefferson County

KENNER—Joseph Starns Kopfler.

Jefferson Davis County

LAKE ARTHUR—*Walter Russell Abney*. WELSH—*Claude Alexander* Martin; William Luther Stewart.

Lafayette County

LAFAYETTE—Charles Henry Pickett.

Lafourche County

THIBODAUX—Ewell Augustus Kleinpeter.

La Salle County

JENA—James Arthur Coleman.

Lincoln County

RUSTON—Delane S. Calhoun; William S. Rutledge.

Natchitoches County

MARTHAVILLE—Charles Buchanan Law. MELROSE—John Luther Kelly.

Orleans County

NEW ORLEANS—Davis Adiger; Ernest Emile Allgeyer; Charles A. Bahn; William E. Balsinger; Claude D. Barkley; Theodore Thomas Batson; Webster Whitall Belden; William Louis Bendel; Edgar Joseph Beranger; Thomas Buffington Bird; Rupert Michum Blakely; Charles James Bloom; Roy Elmer Bodet; Eleazer Robinson Bowie; Muir Bradburn Jr.; Sidney Francis Braud; Guy Allen Brooks; Frederick Temple Brown; Wiley R. Buffington; Clarence A. Burgheim.

William Otis Callaway; Philips John Carter; Frank Chetta; S. M. D. Clark; George Augustus Cronan.

Joseph Rigney D'Aunoy; Henry J. Dauterive; Bradley B. Davis; John Fleming Dicks; Presley Young Donald; Isadore Dyer.

Nicholas Kuntz Edrington; John B. Elliott Jr.; Edouard B. F. Faget; Erasmus Darwin Fenner; Frederick Leonard Fenno; John Blaize Ferran Jr.; Edward P. Ficklen; Winfield Newton Floyd; Lucien A. Fortier; Robert H. Foster.

Louis Julian Genella; Gustav Raphael Gerson; Addley Hogan Gladden Jr.; James Birney Guthrie.

John Taylor Halsey; William McLeod Hayes; Louis Alexander Hebert; James A. Henderson; Ralph Hopkins; Joseph Marion Hountha; Edward James Huhner; *Ralph Wilbur Humphreys; Solon Robinson Humphries.*

Albert Charles Jackson; Stanford Challie Jamison; Will O'Daniel Jones.

Harold Leslie Kearney; William S. Kerlin; Kenneth W. Kinney; William F. Krone.

Paul George LaCroix; Oliver Willard Landry; John Alex. Lanford; Thomas Latiolais; Lucien Amaron Ledoux; Isaac Ivan Lemann; Abraham Louis Levin; Lewis Harris Levy; James L. Locascio; Henry Clarence Lochte; Louis Vyasa James Lopez.

Urban Maes; Roger John Mailhes; Thomas William Martin; Rudolph Matas; Abraham Mattes; Robert Paul McGowan; John Campbell McSween Jr.; Louis Anthony Meraux; Montefiore Meyer; William George Millholland; Charles Jefferson Miller; John Wesley Moore; Edmund Moss; Daniel J. Murphy.

Emile Fidel Naef; Mayer Aby Newhauser; Karl Winfield Ney; Henry T. Nicolle.

John Tolson O'Ferrall Jr.; Joseph Herbert Page; Frederick William Parham; Jose A. Perez; Ruffin Trousdale Perkins; William Martin Perkins; Joseph M. Perret; Oliver L. Pothier; Edward Burke Preis.

Walter Henry Reilley; Arthur Wellington Rhyne; Waldemar Tissott Richards; Labasse Joseph Robin; George Frederick Roeling; Jacob Rosenthal.

Warren Fielding Scott; William H. Seemann; Covington Hardy Sharp; John Signorelli; Henry T. Simon; Harry V. Sims; John Smyth; Jack Sidney Stell; Henry Newell Stilphen; William Robinson Strange.

William Barclay Terhune; Bert Tilley; John Almy Tompkins Jr.; Irenaeus Nicholson Tucker; George Hampton Upton; Roy McLean Van Wart; Charles Edwin Verdier; Rubie Justin Vining; Reymond Christian Voss; Joseph D. Weis; Presley Ewing Werlein; William H. Wynn.

NEW ORLEANS—William Edward Barker Jr.; Joseph Anthony Danna; Joseph P. Israel; Waldemar R. Metz; Percy Lennard Querens; Edward Dwight Rodda; Walter Clifton Royals; John Milton Singleton Jr.

Ouachita County

MONROE—Herbert C. Cole; Leonidas Barkdull Faulk; David Isaac Hirsch; Armand G. McHenry; George William Wright.

Plaquemines County

BURAS—Hewitt L. Ballowe. BURRWOOD—Dalton Harris Trepagnier.

Pointe Coupee County

NEW ROADS—Joseph Farnand Cazayaux. OSCAR—Eric L. Major.

Rapides County

ALEXANDRIA—Jack T. Cappel; Marvin Cappel; Cyriaque J. Gremillion; Paul King Rand; Robert L. Randolph. BOYCE—Arthur *Richard* Choppin. GLENMORA—William E. Reid. LECOMPTE—Frank Montague Lett.

Richland County

DELHI—Robert L. May. GIRARD—Houston Carlisle Chambers. RAYVILLE—James Clarence Sartor.

St. Bernard County

POYDRAS—John F. Dunshie.

St. Charles County

HAHNVILLE—Theophile Albert Combie.

St. Landry County

SUNSET—Charles Edward Hamilton. MELVILLE—Lester James Williams.

St. Martin County

ST. MARTINVILLE—Patrick Henry Fleming.

St. Mary County

FRANKLIN—Daniel Nathan Silverman.
CHARENTON—James William Kirby.

St. Tammany County

SLIDELL—Aaron Walter Brazier. SUN—Victor Lamar Henton.

Tangipahoa County

AMITE—Glenn J. Smith. INDEPENDENCE—Nicolo V. Alessi.

Tensas County

LOCUST RIDGE—James Moore Adams. NEWELLTON—Ralph Prosser Evans. WATERPROOF—Joseph Marion Gorton.

Terrebonne County

HOUMA—Thaddeus Ignatius St. Martin.

Union County

MARION—Allen B. Wheelis.

Vermilion County

ABBEVILLE—Harold G. F. Edwards. ERATH—Pressley Aloysius Kibbe.

Vernon County

BARHAM—Christopher Columbus Self. FULLERTON—Milton William Talbot. LEESVILLE—Daniel Oscar Willis.

Washington County

ANGIE—William T. McNeese. BOGALUSA—Truss Malcolm Brister. ZONA—Haston Varnada Jones.

Webster County

SPRING HILL—Birt Lee Browning.

West Baton Rouge County

PORT ALLEN—Paul Bernard Landry.

Winn County

WINNFIELD—Daniel Wade Kelly.

MAINE MEDICAL ASSOCIATION

Officers 1917-18

J. A. Spalding, President	Portland
George Coombs, First Vice President	Calais
D. M. Stewart, Second Vice President	South Paris
B. L. Bryant, Secretary-Treasurer	Bangor

Councilor Districts and Officers

First District.—Cumberland and York counties. F. N. Whittier, Councilor, Brunswick.

Second District.—Androscoggin, Franklin and Oxford counties. Geo. L. Pratt, Councilor, Farmington.

Third District.—Sagadahoc, Knox and Lincoln counties. A. P. Williams, Councilor, Phippsburg.

Fourth District.—Kennebec, Somerset and Waldo counties. Oliver W. Turner, Councilor, Augusta.

Fifth District.—Washington and Hancock counties. W. N. Miner, Councilor, Calais.

Sixth District.—Aroostook, Penobscot and Piscataquis counties. B. L. Bryant, Councilor, Bangor.

MAINE

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Comm'sd in M.R.C., etc.
Androscoggin..	450	4.6	63,806	658	97	3	55	73	67	7
Aroostook......	6,453	88.4	84,825	1,161	73	..	38	57	51	7
[1]Cumberland....	853	3.4	120,281	481	250	2	112	171	163	46
Franklin........	1,789	73.4	19,611	754	26	2	14	17	18	2
Hancock........	1,522	29.8	35,575	697	51	..	16	25	27	6
Kennebec.......	879	7.7	65,595	575	114	1	60	94	74	12
Knox...........	351	8.2	28,981	673	43	1	22	29	26	6
Lincoln.........	457	16.9	18,216	674	27	..	7	20	14	3
Oxford.........	1,980	33.5	39,189	664	59	5	33	41	43	12
Penobscot......	3,258	22.2	91,882	625	147	7	62	101	99	28
Piscataquis.....	3,770	157.1	22,020	917	24	..	18	19	20	3
Sagadahoc.....	250	14.2	18,574	773	24	..	15	15	16	6
Somerset.......	3,633	67.3	38,089	705	54	4	25	36	25	6
Waldo..........	724	20.1	23,383	649	36	..	16	30	15	8
Washington....	2,528	53.8	42,805	912	47	2	23	35	31	3
York...........	989	9.2	71,181	665	107	..	28	67	70	9
Totals.	28,895	24.5	794,216	673	1,179	27	544	833	805	161

[1] Includes Portland, population 64,720; physicians 160 [M.R.C. 39].

HONOR ROLL

Androscoggin County

AUBURN—Herbert Leslie Williams. LEWISTON—Edson S. Cummings; William L. Haskell; True Edgecomb Makepeace; Joseph John Pelletier; Harold E. E. Stevens. LIVERMORE—Willis Elden Gould.

Aroostook County

CARIBOU—Frank Orvis Blossom; Ferderick Leslie Gregory; Charles Francis Thomas. FORT FAIRFIELD—William Gilbert Chamberlain. HOULTON—John Garfield Potter. MAPLETON—Albion Elliot Floyd. WYTOPITLOCK—Harry Whipple Johnson.

HOULTON—Alba G. Walker.

Cumberland County

BRUNSWICK—Leon Stanley Lippincott; E. G. A. Stetson; Frank Nathaniel Whittier. FORT LEVETT—Fred T. Koyl. HARRISON—Charles Bradford Sylvester.

PORTLAND—Thomas Jayne Burrage; Chester Leonard Clarke; William Lewis Cousins; Philip Webb Davis; Carl G. Dennett; Harold Joselyn Everett; Charles E. Fogg; Ernest Bertram Folsom; Thomas Albert Foster; Frank Yuba Gilbert; Carl Dinsmore Gray; Alfred W. Haskell; John Albert Hayward; Erastus Eugene Holt Sr.; Herbert Martin Howes; Royce Brewster Josselyn; Dudley Cromwell Kalloch; Charles Dearborn McDonald; Henry P. Merrill; Herbert Eldridge Milliken; Alfred Mitchell; Roland Banks Moore; Bryant E. Moulton; Nelson Estes Nichols; Julius Calvin Oram; Bertrand Dean Ridlon; William Henry Shanahan; Henry Marshall Swift; Langdon Thaxter; Phillip Pickering Thompson; Talcott Ostrom Vanamee; Merlon Arden Webber; De Forest Weeks; Arthur Winford Herndon White; Arthur Wallace Winch; Charles Silas Wright; Benjamin Franklin Hayden; Frank Herbert Jordan; Loring Sawyer Lombard. WESTBROOK—Wybern A. Coombs.

Franklin County

FARMINGTON—George L. Pratt; Harold S. Pratt.

Hancock County

BAR HARBOR—Elmer J. Morrison. BUCKSPORT—Hedley Vicaro Tweedle. CASTINE—Harrison Briggs Webster. ELLSWORTH—Arthur Hale Parcher. FRANKLIN—Charles Sargent Underhill.

WINTER HARBOR—Jesse Sumner Bragg.

Kennebec County

AUGUSTA—Nessib Simon Kupelian; Henry K. Stinson; Carl Hamlin Witherell; Arthur Clarendon Wright. HALLOWELL—Herbert Wilder Hall. NATIONAL SOLDIERS HOME—David Lloyd Williams. NORTH VASSELBORO—Francis D. Walker. READFIELD—John S. Milliken. WATERVILLE—Arthur Ulderic Desjardins; Edson Everett Goodrich; *Frederick Thayer Hill, John G. Towne.*

Knox County

ROCKLAND—Lester Belmont Bradford; Earl Burton Carr; Michael J. O'Connor; Francis H. Webster. UNION—Lorenzo Walter Hadley. VINAL HAVEN—Freeman Fletcher Brown.

Lincoln County

DAMARISCOTTA MILLS—Willis E. Clarke. DAMARISCOTTA—James Webster Loughlin. WISCASSET—Bernard A. Bailey.

Oxford County

ANDOVER—Frank Elliott Leslie. BETHEL—Raymond Tibbetts. BUCKFIELD—Harold Fisher Atwood. DIXFIELD—James Melvin Sturtevant. HEBRON—Linn Bayard Marshall. NORWAY—Harold M. Allen; Walter J. Avery. OXFORD—Harry B. Farris. RUMFORD—Harold W. Stanwood; Fred Eugene Wheet. SOUTH PARIS—Delbert M. Stewart. WEST PARIS—Fred Everett Wheeler.

Penobscot County

BANGOR—Lester Adams; Raymond Van Ness Bliss; Loren Frank Carter; Henry Milton Chapman; James F. Cox; Harold Hayes Crane; Hugh Gordon McKay; Harry Daniel McNeill; Louis Mordecai Pastor; William Chute Peters; Harrison Leonard Robinson; Herbert Charles Scribner; John Budd Thompson; Walter Everett Whitney; Walter Brown Willey Jr.; Allen Woodcock. *BRADFORD*—Horace Kimball Richardson. BREWER—Leonard Harris Ford; Calvin Merrill Thomas. DEXTER—Gilman Horace Clough; Joseph H. Murphy. EAST MILLINOCKET—*Clarence Linwood Scamman.* ENFIELD—Walter Jean Hammond. LINCOLN—Harold *Merle Goodwin; Isaac Louis Gordon.* MILLINOCKET—Charles Sawyer Bryant. ORONO—William James Young.

BANGOR—William Edward Emery.

Piscataquis County

DOVER—Alvin H. Stanhope. FOXCROFT—Edgar T. Flint. MILO—*James McFadyen.*

Sagadahoc County

BATH—Robert Hannigan; Warren E. Kerschner; Harry F. Morin; Seth Smith Mullin. PHIPPSBURG—Adelbert Franklin Williams. WEST WOOLWICH—Ardenne A. Stott.

Somerset County

BINGHAM—Percival Orison Hopkins. CANAAN—*Harold Thornton* Bibber. FAIRFIELD—Morton H. Langill. MADISON—William Herman Kennison; John Lyman Pepper. NORTH ANSON—Henry Edward *Marston.*

Waldo County

BELFAST—John Chellis Ham; Harry Leonard Kilgore. *BROOKS*—Norman Randolph Cook. ISLESBORO—George Warren Phelan. SEARSMONT—Charles Wesley Kingshorn. SEARSPORT—Sumner Chadbourne Pattee. UNITY—Preston W. Whittaker. WINTERPORT—Leroy Henry Smith.

Washington County

CHERRYFIELD—Dana Frank Cummings. MACHIAS—Oscar F. Larson. PRINCETON—Harold Ross De Pue.

York County

BIDDEFORD—David E. Dolloff; Paul S. Hill; Clarence F. Kendall. William E. Youland Jr.; KENNEBUNK—Justin Starr Barker. SACO—Lester Lovett Powell. SANFORD—Stephen Aratas Cobb Jr.; Daniel Webster Wentworth. SOUTH BERWICK—Charles E. Cook Jr.

MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND

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J. E. Deets, Vice President	Clarksburg
J. McF. Dick, Vice President	Salisbury
J. Staige Davis, Secretary	Baltimore
Julius Friendewald, Treasurer	Baltimore

Councilors

Hiram Woods, Baltimore; W. Brinton, Baltimore; R. Winslow, Baltimore; H. B. Stone, Baltimore; H. L. Naylor, Pikesville; W. T. Todd, Mt. Washington; S. M. Linthicum, Baltimore; W. S. Archer, Bel Air; L. C. Carrico, Bryantown; L. F. Barker, Baltimore; R. Lee Hall, Pocomoke City; C. O'Donovan, Baltimore; Peregrine Wroth Jr., Hagerstown; J. F. Crouch, Baltimore.

HONOR ROLL

Allegany County

[illegible] M. Cavanaugh; Winter Reginald Frantz; George
Ol[illegible] F. Williams Jr.; Frank Minium Wilson; James
H. [illegible] MINES—George Hiram Wilson. FROSTBURG—

William Michel. MT. SAVAGE—F. Alan G. Murray. WESTERNPORT—Alexander Brown Kalbaugh.

Anne Arundel County

ANNAPOLIS—John R. Frank. CROWNSVILLE—*Nolan Don Carpertier*
Lewis. FRIENDSHIP—Compton Wilson. GALLOWAYS—*Martillus Hollis*
Todd. *MILLERSVILLE*—Harry Baldwin Gantt. ODENTON—Oscar Har-
rison McNemar.

CURTIS BAY—William Dodds Scott Jr.

MARYLAND

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Allegany........	443	6.1	68,774	942	73	1	38	53	46	10
Anne Arundel...	432	10.8	39,553	988	40	2	19	28	17	7
Calvert.........	218	21.8	10,398	1,039	10	..	5	5	9	1
Caroline.........	319	14.5	21,382	971	22	..	9	15	14	4
Carroll.........	447	7.1	33,986	539	63	3	23	35	35	4
Cecil............	377	11.4	23,759	719	33	..	15	20	25	5
Charles.........	464	33.1	16,386	1,170	14	..	7	10	3	2
Dorchester......	571	19.0	29,184	972	30	..	16	22	19	4
Frederick.......	663	8.4	53,221	686	79	1	44	59	46	6
Garrett.........	685	14.8	21,859	1,366	16	..	11	14	9	2
Harford.........	442	11.9	27,965	755	37	..	18	25	18	6
Howard.........	250	10.9	16,106	700	23	..	10	16	12	2
Kent............	282	13.4	16,957	807	21	..	8	13	7	1
Montgomery...	521	10.0	33,284	640	52	1	28	32	35	11
Prince Georges.	482	19.0	40,708	866	47	1	16	24	20	3
Queen Annes....	365	17.4	16,839	801	21	..	8	15	6	1
Saint Marys....	371	26.5	17,030	1,216	14	..	3	10	3	2
Somerset.......	331	12.7	26,843	1,032	26	1	12	16	18	2
Talbot..........	268	11.6	19,620	853	23	..	10	14	13	1
Washington....	459	5.9	52,850	678	78	1	30	52	50	8
Wicomico.......	371	14.2	29,706	1,142	26	..	18	23	14	2
Worcester......	495	20.6	22,554	939	24	..	13	17	13	1
Baltimore......	650	4.8	145,411	1,077	135	2	43	97	69	14
Baltimore City.	30	0.02	625,000	460	1,358	58	865	1,112	567	304
Totals........	9,641	4.2	1,409,415	621	2,268	71	1,269	1,727	1,088	403

Baltimore City County

BALTIMORE—James Stewart Akehurst; Franklin Anderson; Walter Thomas Anderson; Howard E. Ashbury; Algernon Duval Atkinson; Henry Exum Austin.

William S. Baer; Frederick H. Beatjer; Walter A. Baetjer; Bartus Trew Baggott; Charles Bagley Jr.; John H. Baird; Horace McMurran Banks; Robert P. Bay; Stanhope Bayne-Jones; Edward B. Beasley; Edward Hayes Benson; Bertram Moses Bernheim; *Carl Alfred Lanning* Binger; Herbert C. Blake; Joseph C. Bloodgood; Charles John Boehs; Thomas Richmond Boggs; James Bordley Jr.; Earle Griffith Breeding; Hugh Warren Brent; Eveleth Wilson Bridgman; Ipolitas Benediktas Bronushas; Charles R. Brooke; William Lewis Brosius Jr.; Greenberry Bedford Brown Jr.; Nathan Worth Brown; Charles Teackle Carter *Buckner*; Walter Cleveland *Burket*; Charles Hammon Burton.

Curle Latimer Callander; Harry R. Carroll; David Wendel Carter Jr.; *Henry R. Carter Jr.*; *Howard Lee Cecil*; Thomas R. *Chambers*; Joseph A. Chatard; *Alan M. Chesney*; James Julian Chisolm; Paul William Christman; Admont Halsey Clark; John White Clift; Stanley *Cobb*; William J. Coleman; John Archibald Campbell Colston; Sydney M. Cone; Wilford *Anderson Hall*; *James Eric Cudd*; Robert Sydney *Cunningham*.

Wendell Phillips Dally; William H. Daniels; John Thomas Daves; William Brown Davidson; Edwin Greene Davis; John Staige Davis; Pinkney Lee Davis; Walter Lee Denny; Frederick L. Detrick; William Dew; Louis Diener; Carl Herman Dolge; Cranford H. Douthirt; Ernest Speers du Bray; William Core Duffy.

Page Edmunds; Charles R. Edwards; Michael Joseph *Egan Jr.*; Joseph Pugh Edison; Albert Eisenberg; Franklin Charles Eleder; Edward *Dorsey* Ellis; DuMont Frelinghuysen Elmendorf; Charles Bertram Ensor; Clarence P. Erken-Brack; Dorsey Paul Etzler; Alexander Mason *Evans*; *Frank* Alexander Evans; John Evans.

Leon Kendall Fargo; Rhodes Fayerweather; Israel *Jacob Feinglos*; Maurice *Feldman*; *John* M. T. Finney; William Parker *Finney Jr.*; William Alexander Fisher Jr.; Herbert Melvin Foster; *Edgar Bar* Friedenwald; Robert Guy Fuller; John S. Fulton.

Herman Anderson Gailey; *Cary* B. Gamble Jr.; Joseph Edward Gately; William *Russell Geraghty*; *Hugh* Clinton Fiske Gill; Alexander James *Gillis*; *Ernest Fred* Gott; Harry Gross; Bowers Hewitt Growt; Clyde Graeme Guthrie.

Charles Carroll Habbiston; Albert Gaither Hahn; Roscoe Willis Hall;
Howard Harrison Hamman; Martin Jay Hanna; William Morris *Happ*;
George Edward Webb Hardy Jr.; Bryant Eugene *Harrell*; *Archibald*
Cunningham Harrison; Eugene Henderson *Hayward*; Erland Harold Hed-
rick; Arthur *Pendleton* Herring; George J. Heuer; Isidore Isaac *Hirsch-*
man; Charles Wilbur Hoffman; Leslie Benjamin Hohmann; Joseph
William Holland; Lysander Palmer Holmes; Lewis *Hoagland Howard*;
John Howland; Jack Mason Hundley Jr.; Raymond Garrison *Hussey*;
Amos Francis Hutchins.

Walter J. Jackson; Louis Llewellyn Jacobs; *Benjamin Meyer Jaffe*;
William Herndon Jenkins; Frank *Leslie* Jennings; *Edward Sooy Johnson*;
Harry G. Johnson; Robert William Johnson; *Robert* Wilkinson *Johnson*
Jr.; Charles Loring Joslin; Moses Randolph Kahn; *Francis Xavier*
Kearney; Claude Currie Kelly; Joseph *William Ketzky*; *Clapman* Price
King; John Henrickson King; John Theodore King Jr.; *Hubert C. Knapp*;
Earnest A. Knorr; Henry Rowland Kritzer.

Charles Adam Laubach; *Morris* Benjamin Levin; *Milford Lery*; *Robert*
M. Lewis; Moses Louis Lichtenberg; Oscar V. *Linhardt*; Edgar S. Lintni-
cum; Frederick H. Linthicum; John Gabriel Long; Edward Anderson
Looper; Coen L. Luckett; John Francis Lutz; Frank S. *Lynn*; Duncan
McCalman; Frank Christian Marino; Frank *Martin*; *Henry* Page Mauck;
William T. May; Erwin Emanuel Mayer; Standish *McCleary*; Alexander
Douglas McConachie; Joseph *Libby* McLaughlin; *Claude* V. McMeen;
Henry Merkel; Gilbert Richard *Mickletwaite*; William Lawrence Millea;
Theodore Sidney Moise; Joseph *Earle* Moore; *Arthur* Bernard Moran;
William Lorenzo Moss; John G. Murray Jr.

William Neill Jr.; Samuel Newman; *Clarence* Adolph Neymann;
Firmage King Nichols; Frank Peter Nicholson; Carl Clyde Nohe; Joseph
Edward Norris; Edward Novak; James Joseph O'Connor; Walter A.
Ostendorf; Newdigate Moreland Owensby; Marcus Ostro; Juan L. Paya-
wall; Phillip Pearlstein; *Horhannes Kevork* Peltekian; Clement A. Pen-
rose; Don *Preston Peters*; *Francis* Joseph Powers; George Heinrichs
Preston; *Samuel* Orr Pruitt.

Fred Wharton Rankin; *Moses Raskin*; Charles W. Rauschenbach;
Ralph Lewis Reber; Clarence *Mansfield Reddig*; Sidney O. Reese Jr.;
Mont Rogers Reid; *Charles* Adam Reifschneider; *Andrew Jackson Reik*;
Henry Ottridge Reik; Frederick Oscar W. Reinhard; George Herman
Reinhardt; William W. *Requardt*; *Gabriel E. Rigau*; Thomas Milton
Rivers; *Harry* Lee Rogers; *Gilbert White Rosenthal*; Lewis J. Rosenthal.

Joseph Salan; Edgar P. Sandrock; *Bertram* Julian Sanger; Abraham
Schapiro; Samuel Dennison *Shannon*; *Henry* Newton Shaw; *Joseph*
Pardoe Shearer; *Albert Shelley*; *Lloyd* P. Shippen; Arthur M. Shipley;
Alfred Theodore Shohl; *David* Silberman; Albert George Singewald;
Henry Nathaniel Sisco; John Galen Skilling; Harry R. Slack Jr.

Daniel C. Wharton Smith *II*; *Henry Lee Smith*; William Henry Smith;
Willford H. Smith; Anton *Christian Sorenson*; James Spencer *Speed*;
Hugh Raymond Spencer; Lewis Cass Spencer; Henry Hodges Stansbury;
Harry Michael Stein; *Leo Fleischer* Steindler; Daniel D. V. Stuart;
George Adolph *Stewart*; *George* L. *Stickney*; Harvey Brinton Stone;
David Corbin *Street*; *Alan* C. *Sutton*; Hugh Wilson Sweeny; Virgil Pres-
ton Willis Sydenstricker.

Robert Tunstall *Taylor*; *William* S. *Thayer*; Charles Roberts Thomas;
William Smith Tillet; *Gideon Timberlake*; Horace Bullock Titlow; Mar-
tillus Hollis Todd; John *Henry Traband* Jr.; John Turner; J. Harry
Ullrich; William Van *Kirk*; *Fred* H. Vinup; William Carson Von Glahn.

Arthur Cochran Walker; *George* Walker; Henry Janney *Walton*; Howard
H. Warner; Theo. B. Warner; Charles Alexander Waters; Lewis Hill
Weed; Paul Gerhardt *Weisman*; William Henry Welch; Fred P. Weltner;
Maurice Cornelius Wentz; *Howard Lawrence* Wheeler; Samuel Augustus
White; William Kelso White; *Lloyd Bankson* Whitham.

Harry Lyman Whittle; George Richard Wilkinson; Gordon Wilson; Harry
Eugene Wilson; Nathan *Winslow*; *George Bermays* Wislocki; Humphrey
Dorsey Wolfe; Roy Azanah *Wolford*; *Austin Hislop* Wood; Churchill
Freeman Worrell; Frank *Dallam* Worthington; Herbert Maxwell Wynne;
Hugh Hampton Young; Isadore Zadek.

BALTIMORE—Wm. Willis Anderson; Nathaniel Hawley Brush; Geo. G. E. Cross; Vernc R. Mason; Horace Withers Reid; Lawrence Richardson Wharton; William Houston Toulson.

Baltimore County

CATONSVILLE—V[illegible] : Joseph Carroll Monmonier;
John Guy Runkel. [illegible] Payne. GLENARM—Adam
William Reier. GO[illegible] ; George William Bishop.
OWINGS MILLS—Kenneth Barzillai Jones; Elbert *Coy Reitzel*. PIKES-
VILLE—Henry Alan Naylor. [illegible] ilkinson.
[illegible] Joseph J [illegible] Thomas
[illegible] —James [illegible] Milner
Bortner.

Calvert County

WALLVILLE—*George* Peterson.

Caroline County

DENTON—*Benjamin Bruce Brumbaugh*; Percy R. Fisher. PRESTON—John *Raymond Downes*. *RIDGELY*—Jacob C. Madara.

Carroll County

HAMPSTEAD—*Harry Cleveland Preston*. SYKESVILLE—Henry Fred John Buettner; *Frank Nevin Ogden*. WESTMINISTER—Thomas Joseph Cooman.

Cecil County

ELKTON—William Dennis Cawley; Henry A. Mitchell. *NORTH EAST*—Wilmer M. Priest. *PORT DEPOSIT*—Clarence I. *Benson*; *Granville Hampton Richards*.

Charles County

INDIAN HEAD—Maynard James Simmons. NEWPORT—*Francis* Eugene Jameson.

Dorchester County

CAMBRIDGE—Raymond Kennedy Foxwell; Marcus Duke Smith. FISHING CREEK—William Humes Houston. VIENNA—*Edward Elmer Lamkin*.

Frederick County

FREDERICK—Charles Henry Conley; George Bruce Crist; Bernard Oscar Thomas. NEW MARKET—Charles Lowe Magruder. STATE SANATORIUM—William Howard Yeager. WOODSBORO—William *Hartman* Mitchell.

Garrett County

KITZMILLER—Edward Judson Miller. OAKLAND—Henry Stanley *Kable*.

Harford County

ABERDEEN—Vernon Stevens Wilkinson. BEL AIR—William Young Hollingsworth; Purnell Fletcher Sappington. FALLSTON—Richard Emory Yellott. HAVRE DE GRACE—John Collinson. PERRYMAN—Jay Hugh *Stier*.

Howard County

ELLICOTT CITY—Frank Oldham Miller. GUILFORD—Louis H. Douglas.

Kent County

CHESTERTOWN—*Frank Brown Hines.*

Montgomery County

BARNESVILLE—Joseph Meade White. BROOKSVILLE—John Hall Janney Jr. CHEVY CHASE—Thomas Kennerly Conrad; John Ryan Devereaux. DAMASCUS—George Milton Boyer. KENSINGTON—Thornton Moore Shorkley. POOLESVILLE—Francis Thomas Williams. ROCKVILLE—George Edwin Lewis. SILVER SPRINGS—Howard Henry Howlett; Howard Montgomery. TAKOMA PARK—Charles Lee Baker.

Prince George County

BOWIE—James Handy Truitt. HYATTSVILLE—Caldwell Woodruff. LANHAM—*Herbert Brodger* Montgomery.

Queen Anne County

QUEENSTOWN—Samuel Jackson Price.

Somerset County

CRISFIELD—Rastus Ranson Norris; John C. Woodland.

St. Marys County

JARBOESVILLE—Philip J. Bean; James Douglas Crane.

Talbot County

EASTON—Alexander McCulley Stevens.

Washington County

HAGERSTOWN—Charles Nelson Branin; Frank Newcomer Hoffmeier; Richard Fulton Kieffer; Paul Nelson Fleming; William Hamilton Smith Jr.; Ralph Stanley Stauffer. HANCOCK—William Fulford Sappington. WILLIAMSPORT—Ira Melvin Zimmerman.

Wicomico County

BIVALVE—Robert E. Caldwell. SALISBURY—John Martin Elderice.

Worcester County

BERLIN—Ira Clinton Tyndall.

MASSACHUSETTS MEDICAL SOCIETY

Officers 1917-18

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George P. Twitchell, Vice President..........................Greenfield
Walter L. Burrage, Secretary..........................Boston
Arthur K. Stone, Treasurer..........................Boston
Edwin H. Brigham, Librarian..........................Brookline

MASSACHUSETTS

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Barnstable.....	409	7.7	29,296	554	53	2	24	37	37	5
[1]Berkshire.......	966	6.4	118,886	798	149	6	70	104	83	22
[2]Bristol.........	567	1.4	368,585	949	380	23	274	295	185	56
Dukes..........	107	11.8	5,054	561	9	..	3	4	4	..
[3]Essex..........	497	0.9	507,572	901	561	30	391	332	299	51
Franklin........	697	11.4	50,369	825	61	1	23	42	37	7
[4]Hampden.......	636	1.7	281,559	756	372	22	207	278	224	55
Hampshire.....	585	5.9	72,371	730	99	12	43	71	63	14
[5]Middlesex.......	822	0.83	773,637	779	993	74	627	671	601	119
Nantucket......	51	5.6	3,258	362	9	1	2	4	3	2
[6]Norfolk.........	410	1.3	214,851	720	298	35	146	222	170	12
[7]Plymouth......	675	2.1	167,597	532	215	10	105	155	119	29
[8]Suffolk.........	51	0.02	363,688	175	2,067	151	1,051	1,609	1,229	329
[9]Worcester......	1,556	2.5	446,723	739	604	36	430	441	319	69
Totals........	8,039	1.36	3,403,696	669	5,870	403	3,410	4,325	3,403	791

1. Includes Pittsfield, population 43,601; physicians 66 [M.R.C. 13].
2. Includes Fall River, population 129,828; physicians 143 [M.R.C. 22], also New Bedford, population 121,622; physicians 133 [M.R.C. 22], also Taunton, population 37,023; physicians 39 [M.R.C. 4].
3. Includes Haverhill, population 51,870; physicians 77 [M.R.C. 5], also Lawrence, population 102,923; physicians 93 [M.R.C. 3], *also Lynn*, population 104,534; physicians 132 [M.R.C. 17], also Salem, population 49,346; physicians 49 [M.R.C. 4].
4. *Includes* Chicopee, population 32,287; physicians 11 [M.R.C. 2], also Holyoke, population 66,503; physicians 74 [M.R.C. 6], also Springfield, population 109,298; physicians 199 [M.R.C. 35].
5. Includes Cambridge, population 114,293; physicians 171 [M.R.C. 26], also Everett, population 40,160; physicians 29 [M.R.C. 2], also Lowell, population 114,366; physicians 124 [M.R.C. 14]; *also* Malden, population 52,243; physicians 58 [M.R.C. 4], also Medford, population 33,848; physicians 16 [M.R.C. 3], also Newton, *population* 44,614; physicians 94 [M.R.C. 11], also Somerville, population 91,218; physicians 66 [M.R.C. 6], also Waltham, population 31,206; physicians 36 [M.R.C. 5].
6. Includes Brookline, *population* 36,075; physicians 78 [M.R.C. 11], and Quincy, population 44,318; physicians 31 [M.R.C. 8].
7. Includes Brockton, population 69,152; physicians 81 [M.R.C. 11].
8. Includes Boston, population 772,997; physicians 1,957 [M.R.C. 312], and Chelsea, population 48,405; physicians 59 [M.R.C. 10].
9. Includes Fitchburg, population 42,419; physicians 49 [M.R.C. 5], and Worcester, *population* 170,280; physicians 297 [M.R.C. 31].

HONOR ROLL

Barnstable County

HARWICH—Percy Farrington Miller. HYANNIS—Herman Baker Chase; Charles Edward Harris. PROVINCETON—Roy Farrington Brown; Clarence P. Curley.

Berkshire County

GREAT BARRINGTON—John Dodge Peters. LANESBORO—Louis Dwight Barnes. MILL RIVER—Robert Cowan Sellew. NORTH ADAMS—Robert Carpenter; Nicholas Matthew Crofts; *Arthur* M. Curran; George Lally Curran; Charles Wadsworth Wright. PITTSFIELD—Isaac Spencer F. Dodd; Daniel Francis Hannon; Kenneth Johnson; William James Lally; Thomas Littlewood; William *Thomas* McMahon; Edward R. Messer; Arthur Fredolf Peterson; Harry Albert Schneider; Harrison Morton Stewart; John Albert Sullivan; *Harry John* Tate; John Blanchard Thomas. WILLIAMSTOWN—Frederick Hollis Howard.

Bristol County

[illegible] affrey; Wilfred Francis Milot; Patrick [illegible] Frederick R. Barnes; William Henry Bla[illegible] George E. Butler; Thomas Cox, John Her[illegible] Jonathan Pyott Hadfield; John Patrick Jackson; Samuel Benjamin Kaufmann; Elie Joseph La Liberte; John Hathaway Lindsey; Richard Patton MacKnight; William Frank MacKnight; Ernest Dona Milot; Ernest *Marriett* Morris; William Sarsfield Morris; George Gibson Parlow; Ralph Hayward Simmons; Clarence Winfield Stansfield; Philemon Edwards Truesdale; Charles Hansell Watt. FT. RODMAN—Thomas S. Lowe. MANSFIELD—Benoni Mowry Latham; Myricks John Albert Randall.

NEW BEDFORD—*Arthur* Lord Brunelle; Clarence E. Burt; Hormidas Choquette; Randall Clifford; Jacob Gennert; John G. Hathaway; Erick St. John Johnson; Evariste La Riviere; Dennis Joseph Lowney; John Francis Mahoney; William Aloysius McCormick; William Armitage Moncrieff; Patrick Henry O'Connor; Raoul Caston Provost; J. Norman Risley; Anthony Joseph Roderick; Raymond Ernest Seneeal; William Clinton Sheehy; Frank Eliot Stetson; William Kenneth Turner; John B. Webster; Edward Wallace Young. NORTH ATTLEBORO—Edward Silvanus Ward. TAUNTON—Andrew James McGraw; Joseph Leroy Murphy; R. A. Pierce; Joseph Borland Sayles.

NEW BEDFORD—Robert Irving Walker.

Essex County

AMESBURY—Michael Edward Connor. BEVERLY—Dwight Cowles; Peer Prescott Johnson; Harry Edward Sears; Whitman Gibson Stickney. DANVERS—Fergus Almy Butler. ESSEX—Joseph Simpson. GLOUSTER—James H. Malonson; Scott Weber Mooring. GROVELAND—Elmer Stanley Bagnall. HAVERHILL—Charles James Carden; Lucien Romeo Chaput; William Cog[illegible]; Homer Leigh Conner; Arthur Otis McLaughlin.

LAWRENCE—Joseph Forest Burnham; William Howe Merrill; Joseph Michael Scanlon. LYNN—Nathaniel Pope Breed; Henry L. Davis; Eugene Malcolm Dolloff; George W. Eastman; George Henry Gray; Gustave Hartmann; Leonard W. Hassett; Charles Louville Mason Judkins; William Vinant Kane, William Franklin Lemaire; Louis H. Limauro; Roy W. Mathes; Charles Henry Merrill; Everett Albert Merrill; Frank Wilbur Atkins Mitchell, Thomas Bernard Rafferty; John Wilson Trask. MANCHESTER—Rufus Wilfred Long. MARBLEHEAD—Martin William Peck. METHUEN—Arthur J Ganley; Rolfe Clarke Norris. NEWBURYPORT—Thomas R. Healy; Frank Whipple Snow; Abraham Fifield Thomas.

SALEM—Lawrence E. Chisholm; DeWitt S. Clark; Ralph Winson Haywood; Edward A. Rushford. SAUGUS CENTER—George Clarence Parcher. TEWKSBURY—Harry Ray Coburn. TOPSFIELD—Thomas L. Jenkins. WENHAM—John Charles Phillips.

HATHORNE—Alfred P. Chronquest.

Franklin County

CONWAY—Clarence Henry Dobson. GREENFIELD—Charles Francis Canedy; Edward Bryant Hodskins; David James McConnell; Frank Albertus Millett. ORANGE—Kirke Locke Alexander. SHELBURNE FALLS—Charles Louis Upton.

Hampden County

BLANDFORD—Percy Andrew Shurtleff. CHESTER—Howard Arthur Lanpher. CHICOPEE—Max Phillip Cowett; John H. C. Gallagher. CHICOPEE FALLS—William Joseph Dillon. EAST LONG MEADOW—Ellsworth Emmett Light. HOLYOKE—Dolor Israel Beaupré; Philip Henry Clarke; William Francis Greaney; George Dallas Henderson Jr.; Edgar Hamill Hughes; William Patrick Ryan. LONG MEADOW—Harry C. Martin. PALMER—Buell Leslie Ashmore; Morgan B. Hodskins; James Moore Murphy.

SPRINGFIELD—William B. Adams; George H. Bergeron; John Mathews Birnie; Orland R. Blair; Harold F. Budington; George Herbert Burke; Harry F. Byrnes; William Andrew Robertson Chapin; Johnston Louis Chereskin; John McMahon Claffy; William Leo Connery; Parker M. Cort; Ernest Leland Davis; Augustus Hughes Galvin; Ernest A. Gates; David Eugene Harriman; Arthur J. Horrigan; Clyde C. Johnston; Philip Kilroy; Charles Francis Lynch; Patrick Maurice Moriarty; Albert Augustus Naumann; James H. Quinn; Richard Augustine Rochford; Samuel Dudley Rumrill; George Leonard Schadt; Mortimer Joseph Stoddard; John Frank Streeter; John Matthew Tracy; Albert Julius Treichler; Walter Rupert Weiser; Harry Ray Wheet. WESTFIELD—Miles Dudley Chisholm; Joseph Justin Cosgrove. WEST SPRINGFIELD—Warren John Bostick; George B. Corcoran.

SPRINGFIELD—Robert Nason Nye; Bernard Rabinovitz; Henry Zimmerman.

Hampshire County

[illegible] HERTOWN—Henry Whitney [illegible] lineau; Werner Hiltpold; [illegible] HAY[illegible] DENSVILLE—Charles Eugene Perry. N[illegible] Nelson Ball; Joseph Daniel Collins; William [illegible] Chase Greene; Benjamin Franklin Janes; Herb[illegible] Ellsworth Thomas.

Middlesex County

ARLINGTON—Robert Bates Hunt; Ezekiel Pratt. AYER—Bertrand Hiram Hopkins; Herbert Bancroft Priest. BELMONT—Frank Clyde Leavitt. CAMBRIDGE—Frank Brown Berry; Frederick B. M. Cady; Samuel Edward Chalfen; George Proctor Cogswell; Eugene Abraham Darling; David C. Dow; Augustus W. Dudley; John E. Dwyer; William J. Dwyer; Herbert Reynold Fiege; Lyman Sawin Hapgood; Simon B. Kelleher; Roger Irving Lee; John Joseph Murphy; Edward Rosen; Richard Bliss Leith; Frederick Artemas Simonds; John J. H. Smith; *Ralph Cleaves* Wiggins; Horace P. Stevens; William Kilpack Smith Thomas; Everett Hale Tomb; George Arthur White. EVERETT—Henry Joseph Keaney; William Sullivan Schley.

FRAMINGHAM—George Carmine Bionde; William B. Blanchard; James Glass; Leon Webster Jessaman; Albert S. Owen; Cyrus Brown Partington; Austin E. St. Clair. HUDSON—Thomas Francis *Tierney*. LEWKSBURG—Charles Wentworth DeWolf; Howard Knowlton Tuttle. LEXINGTON—Albert Pfeiffer; James J. Walsh. LINCOLN—Joseph S. *Hart*. LOWELL—Elphege A. Beaudet; Mason D. Bryant; Tancrede Deodatis Chagnon; Charles Stanislaus Doucet; Robert Leroy Jones; John Henry Lambert; Harold Leander Leland; Clarence Bertram Livingston; Burton Edward Lovesey; Roy Stanley Perkins; Nathan Pulsifer; James Y. Rodger; William Francis Ryan; Harry Herbert Sumner.

MALDEN—Nicholas Ambrose Gallagher; Earle Haggett MacMichael; Eugene J. McCarthy; Clarence Whitcomb. MARLBORO—James T. Buckley; Stephen James Dalton; Alfred Mederic Lemay; Clyde Harold Merrill; Henry Ashton Robinson. [illegible] Harry Cutter Burrell; Frederick Roscoe [illegible] Pike; Albert Ernest Small. NATICK—[illegible] NEWTON—Edward Augustus Adams; Ridgley Fernald Hanscom; Perez B. Howard; Allan Stewart Kirkwood; Donald Macomber; Arthur Andrew Rattey; William D. Reid; Otho Lester Schofield; Henry Rouse Viets; George Browning Wilbur. SAXONVILLE—Oscar A. Dudley. SOMERVILLE—Earl Edwin Allison; Richard Dana Bell; Manuel Felix Cunha; Frank Leander Morse; Charles Francis Sharry; Harry Abram Walker.

TOWNSEND—Clarence Luther Chandler. WALTHAM—Roland A. Behrman; Ralph Waite Dennen; Irving William Fraim; William Edward Hamlin. WATERTOWN—Alfred Edward King; Edwin Alonzo Meserve. WAVERLEY—Edward Stanley Abbot; Chester P. Brown; Leo Thomas Kewer. WEST [illegible] Campbell; Whitman King Coffin. WEST [illegible]; Charles William Finnerty; John Al[illegible] Victor Anthony [illegible] ane.

[illegible] Van Ness Dearborn; George Ernest Sherman.
[illegible] osby Greene.
[illegible] Henry Mackay.
[illegible] Joseph Otis.

Nantucket County

NANTUCKET—John J. Blue; Frank Edward

Norfolk County

ATLANTIC—Michael Thomas Sweeney. BROOKLINE—Worcester R. Angell; Horace Keith Boutwell; Freeman Hart Hibben; Frederick E. Jones; William Joseph McDonald; William R. Ohler; Roland Oliver Parris; Irving E. Stowe; Joseph H. Surls; Wolfert Gerson Webber. CANTON—Lysander Schaffer Kemp; Dean Sherwood Luce; William E. McPherson. COHASSET—George Osgood. DEDHAM—Alfred Emile Johnson Jr.; Arthur Morton Worthington. MEDWAY—John Howard Wyman. MILTON—Walter Appleton Lane; Charles F. Mains; Donald C. Munro. NANTUCKET—Frank Edward Lewis. NEEDHAM—Frederick Parker Jr.; Charles Wood Pease. NORWOOD—Alfred Archibald Fenton; Clarke Storer Gould; Leighton F. Johnson. QUINCY—Francis Ramon Burke; Edward Henry Bushnell; James Henry Cook; Harold Edgar Diehl; Carl H. Fornell; [illegible] Joseph Harkins; Edwin Eugene Smith. [illegible] SOUTH WYMARTH—Henry Martyn F[illegible]its Ewing; WEST MEDWAY—Samuel B[illegible] M. Ash. WOLLASTON—Walter Homer Lacey.

MEDWAY—Samuel Butler.
HARDING—George Edwin McPherson.

Plymouth County

ALLERTON—Walter H. Sturgis. BRIDGEWATER—Arthur Wyman Carr; Edmund V. Whelan. BROCKTON—Alphonse Frank Budreski; David M. Butler; Lea Philip Crimmin; Cornelius Joseph Dacey; Peirce Henry Leavitt; Charles Daniel McCann; John Anderson Pettey; Alfred Charles Smith; Andrew J. Sullivan; Nial Franklin Twigg. DUXBURY—Nathaniel Kingsbury Noyes. FORT REVERE—James B. Pascoe. HINGHAM—Charles Whelan. KINGSTON—Charles Dudley; Oscar Clinton Swope. MARION—Ralph Harrison Hopkins. NORTH ABINGTON—Frank Edward Wheatley. SOUTH HANSON—Gaspare E. Lentine. WHITMAN—William G. Kinsley; Martin Henry Spellman.

BROCKTON—Albert Orville Raymond.
ROCKLAND—Joseph H. Dunn.

Suffolk County

BOSTON—Donald Stanbury Adams; Zabdiel Boyleston Adams; Arthur W. K. Akerley; Arthur W. Allen; Hiram H. Amiral; Horace D. Arnold; Arthur E. Austin; James B. Ayer; Harold Lester Babcock; Karl R. Bailey; Horace M. Baker; Franklin G. Balch; Jacob Ellis Banquer; John W. Bartol; Carl Bearse; Theodore C. Beebe; Alexander S. Begg; David Lawrence Belding; George Hoyt Bigelow; Jose Penteado Bill; Horace Binney; Clarence H. Birdsall; Franklin Lee Bishop; Nathan Abraham Bolotow; William Parsons Boardman; Frederick L. Bogan; John Taylor Bottomley; Elliott Gray Brackett; Charles W. Bressler; Lloyd Vernon Briggs; Maurice Briggs; Percy Emerson Brown; John Bryant; John Robert Burke; Charles Shorey Butler.

Richard C. Cabot; Harry Phillip Cahill; Richard John Ridgway Caines; Walter Bradford Cannon; Harold Edwards Carney; Orville Rogers Chadwell; Harold B. Chandler; Thomas Evans Chandler; Harry Ainsworth Clark; Howard Merrill Clute; George Clymer; Gardner N. Cobb; Robert Carlyle Cochrane; Nathaniel Maurice Cohen; Samuel Adams Cohen; Albert W. Colwill; William Merritt Conant; Robert J. Cook; William Frederick Cotting; Frederic Jay Cotton; William Thomas Councilman; James F. Coupal; Oscar Francis Cox Jr.; George Arthur Craigin; Arthur Hallam Crosbie; Richard Augustine Cunningham; Harvey Cushing; Carl Albert Dahlen; Alfred T. Dalrymple; Harold W. Dana; Frank Albert Davis; Lincoln Davis; Archie Leigh Dean Jr.; George Parkman Denny; George S. Derby; Vincent Jame Dimento; William Marshall Dobson; Kenneth Llewellyn Dole; Jeremiah J. Donovan; John J. Dowling; John G. Downing; Danna W. Drury; Edward Anthony Duffy.

Harold Burney Eaton; David G. Eldridge; Samuel W. Ellsworth; Theodore Williams Ely; Arthur Brewster Emmons; Henry Manning Emmons; Martin Joseph English; James Hill Erlenbach; Harold Clarence Ernst; Richard Spelman Eustis; Albert Whittier Fellows; John Francis Fennessey; Charles D. Fille Brown; Neil Augustus Fogg; John Hess Foster; Archibald McKay Fraser; Somers Fraser; Edward Henry French; Channing Frothingham Jr.; Arial Wellington George; James Henry Gettings; Albert A. W. Ghoreyeb; Norman Wilkinson Gillespie; Bernard Aloysius Godvin; Thomas R. Goethals; Joel Ernest Goldthwait; Harry Winfred Goodall; Timothy Francis Goulding; Gustave P. Grabfield; Louis Julian Grandison; Horace Gray; Hyman Green; Milo Chester Green; Robert B. Greenough; Allen Greenwood; Fred Clarke Gunter.

Gilbert W. Haigh; Frank Smith Hale; A. J. Hamilton; Burion Everett Hamilton; John W. Hammond; William John Hammond; Wilbert Clark Hardy; Torr Wagner Harmer; Carl Thorburn Harris; Abraham Haskins; David Morris Hassman; David Heffernan; Frank Wellington Hodgdon Jr.; Edward Marshall Hodgkins; Morris Hoffman; Charles Byam Hollings; Sanford Burton Hooker; Albert A. Horner; David Walker Houston Jr.; Joshua Clapp Hubbard; Henry T. Hutchins; Frederick Carpenter Irving; Sumner Waldron Jackson; Arthur Percy Janes; James C. Janney; John Greenwood Jennings; Herbert L. Johnson; Elliott Proctor Joslin.

En Young Kau; Arnold B. Kauffman; George F. Keenan; James Alphonse Keenan; Miner Raymond Kendall; Edward King; Frederick A. King; Robert James Kissock; William Fletcher Knowles; Henry Adolph Kreutzmann; Walter Brackett Lancaster; John William Lane; Thomas Hinckley Lannon; Wesley Terrence Lee; George Adams Leland Jr.; Samuel Albert Levine; Robert Williamson Lovett; Julian Dyer Lucas; Fred B. Lund; Moses H. Lurie; Henry Lyman; Arthur Bates Lyon.

Andrew Roy MacAusland; George Albert MacIver; Donald John MacPherson; John L. Mahoney; Henry Levi Mann; Henry Chase Marble; Searle Bisset Marlow; John Foley Martin; Frank William Marvin; Nathaniel Robert Mason; Patrick Thomas McCarthy; Charles Walter McClure; Francis Henry McCrudden; Cornelius Joseph McGillicuddy; Joseph H. McGuire; Peter G. McKenna; Lewis Steele McQuade; Philip McQuestion; James Howard Means; David Bernard Medalia; Leon S. Medalia; Edgar Matthias Medlar; Adelbert Samuel Merrill; George Richards Minot; Charles Galloupe Mixter; Samuel Jason Mixter; William J. Mixter; Howard Moore; Samuel Leslie Morris Jr.; William Reid Morrison; Almon Gardner Morse; Harris Peyton Mosher; Allen Thomas Moulton.

Kemp Prather Neal; Andrew Nichols III; Edward Hall Nichols; Edwin B. Nielsen; Frank Garm Norbury; Frank Roberts Ober; Harry Olin; Everard Lawrence Oliver; Richard Frothingham O'Neill; Stanley Hart Osborn; Howard Osgood; Robert B. Osgood; George Byron Packard Jr.; Francis Winslow Palfrey; George William Papen; Frederick Parker Jr.; Harold F. Parker; Villard Stephen Parker; Charles William Peabody; Francis Weld Peabody; Hamilton Chesley Perkins; Arthur P. Perry; Warren Martin Pettingill; Frank Piper; Charles Terrell Porter; Joseph Hersey Pratt; James Jackson Putnam Jr.

Alexander Quackenboss; Francis Minot Rackmann; Carlisle Reed; John Arnold Reese; Harold William Ripley; Wyatt Sanford Roberts; William Henry Robey Jr.; Charles Irvin Roderick; Edmund Augustus Rogers; Mark Homer Rogers; Milton Joseph Rosenau; Curtis M. Rosser; Benjamin William Rudman; Israel E[illegible]s Rudman; William Timothy Rumage.

Louis Francis Salerno; Arthur Forrest Sargent; Joseph Carr Savage; Alpha Reuben Sawyer; David D. Scannell; Joseph Walter Schirmer; George H. Schwarz; Andrew Watson Sellards; Clarence Wesley Sewall; Malcolm Seymour; Albert Abraham Shapira; John Holbrook Shaw; Edward B. Sheehan; Warren Sylvester Shields; Joseph Henry Shortell; Max Silverman; Frank W. Sleeper; Harry Caesar Solomon; Robert Fulton Souther; Horace Kennedy Sowles; Lesley Hinckley Spooner; Charles Booth Spruit; Henry Eugene St. Antoine; John Joseph Stack; Albert W. Stearns; Harold Wentworth Stevens; James Kent Stoddard; James L. Stoddard; James S. Stone; Louis Strahlmann; Edward Clark Streeter; Richard Pearson Strong; David Sussler.

John Houghton Taylor; William N. Tenney; John Jenks Thomas; Harold Grant Tobey; James Rockwell Torbert; Cassell Clark Tucker; Louis Joseph Ullian; Beth Vincent; Ludo Von Meysenbug; Ralph Alexander Warden; John Warren; Frederic Augustus Washburn; Joseph Treloar Wearn; Conrad Wesselhoeft; William Fessenden Wesselhoeft; Arthur J. White; Paul Dudley White; Thomas William Wickham; Frank P. Williams; Paul R. Withington; William Franklin Wood; John Dawson Roswell Woodworth; McIver Woody; Wade Stanley Wright; Edwin Theodore Wyman; Ernest B. Young.

BOSTON—Theodore H. Aschmann; Fletcher M. Colby; Paul Carroll Dennett; Paul Waldo Emerson; Rafe Nelson Hatt; Douglas Heath Nisbet; Panagiotis Nichel Papoulacos; Llewellyn Harrison Rockwell; Adolph G. C. Schmack; Frank Robert Sedgley; Lewis Mahlon Spear; Edward Bancroft Towne.

CHELSEA—Allan R. Barrow; Heiman Caro; Frank Hills Chase; Sydney Vernon Kibby; Charles D. Padan; Dallas Pond; Glen A. Sheppard; Dudley D. Shoenfeld; Sigmund Simons; Charles Henry Wilson. DEDHAM—Hollis Goodell Batchelder. FORT BANKS—Walter Midkiff Crandall. HYDE PARK—Charles A. Cullen. REVERE—Joseph Jacob Skirball; Louis Irving Skirball. WINTHROP—Ben Hicks Metcalf; Starr Abner Moulton; Raymond Brewer Parker.

Worcester County

ATHOL—Benjamin Whitney Gleason. BALDWINSVILLE—Walter Franklin Robie; Henry Louis Stick. CLINTON—James Joseph Goodwin. FITCHBURG—Aime Napoleon Fregeau; John H. Kearney; Wilfrid Teller LaFortune; Clayton Rogers Lane; Albert F Rodrick. GARDNER—Samuel Joseph Benoit; Herbert William Ellam; Gordon Brooks Underwood.

LANCASTER—Edward Francis Washburn Bartol; Chester C. Beckley. LEOMINSTER—Appleton Howe Pierce; Frederick Charles Shulties. MILFORD—Francis Stephen Caldicott. NORTH BROOKFIELD—Edward Francis Phelan. OXFORD—Robert Swan Fletcher. PRINCETON—Elisha Sears Lewis. RUTLAND—James A. Lyon. SOUTHBRIDGE—George William Tully. UXBRIDGE—John William Ledbury Jr.; George Thomas Little. WEBSTER—Bernard Louis Plouffe; Ernest Elmer Smith. WESTBORO—Ralph M. Chambers; James Alfred Gould; Walter Arthur Jillson; Roland Stephen Newton; Thomas Joseph O'Brien; Winfred Overholser; Melvin Harvey Walker Jr. WESTMINSTER—George Mossman. WICHENDON—William F. Holzer.

WORCESTER—Winthrop Adams; Howard W. Beal; Gordon Berry; Edward Bridge Bigelow; Alfred George Bolduc; Howard Spencer Colwell; George Henry Crofton; William Edward Denning; Kendall Emerson; Homer Gage; Frank W. George; Donald Robert Gilfillan; Samuel Carlton Gwynne; Frank Edwin Harriman; William Christian Jensen; Roger Kinnicutt; Willard Wallace Lemaire; George Chandler Lincoln; Merrick Lincoln; Israel Lurier; Frank Thorwald Oberg; Charles Augustus Salmon; Roger William Schofield; Edward Burnside Simmons; Hugh Ludwig Simmons; Willard Pierce [illegible] Armour Thom; John Clement Ward; George Watt; [illegible] Abraham K. Yoosuf.

GARDNER—Edw[illegible]
NORTH DANA—Charles Warner Robertson.
WESTBORO—Michael Matthew Jordan.

MICHIGAN STATE MEDICAL SOCIETY

Officers 1917-18

Andrew P. Biddle, President	*Detroit*
J. G. Turner, First Vice President	*Houghton*
J. Mersen, Second Vice President	*Holland*
A. O. Hart, Third Vice President	*St. Johns*
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Third District.—Branch, Calhoun, Eaton and St. Joseph counties. S. K. Church, Councilor, Marshall.

Fourth District.—Allegan, Berrien, Cass, Kalamazoo and Van Buren counties. A. H. Rockwell, Councilor, Kalamazoo.

Fifth District.—Barry, Ionia, Kent and Ottawa counties. W. J. Du Bois, Councilor, Grand Rapids.

Sixth District.—Clinton, Genessee, Livingston and Shiawassee counties. A. M. Hume, Councilor, Owosso.

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Tenth District.—Bay (including Arenac and Iosco), Otsego, Montmorency, Crawford, Oscoda, Roscommon and Ogemaw combined. C. H. Baker, Councilor, Bay City.

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Twelfth District.—Chippewa (including Luce and Mackinaw), Delta, Dickinson-Iron, Gogebic, Houghton (including Baraga and Keweenaw), Ontonagon, Marquette-Alger, Menominee and Schoolcraft counties. R. S. Buckland, Councilor, Barada.

Thirteenth District.—Alpena (including Alcona), Antrim, Charlevoix, Cheboygan, Emmet and Presque Isle counties. F. C. Witter, Councilor, Petoskey.

Fourteenth District.—Lenawee, Monroe and Washtenaw counties. C. T. Southworth, Councilor, Monroe.

MICHIGAN

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Alcona	684	136.8	5,711	1,142	5	..	2	3	2	..
Alger	920	185.0	8,995	1,799	5	..	5	5	4	..
Allegan	833	20.8	70,555	1,763	40	1	17	22	23	6
Alpena	584	32.4	21,213	1,188	18	..	4	7	16	1
Antrim	475	36.5	15,692	1,207	13	..	5	10	6	5
Arenac	374	46.7	9,640	1,205	8	..	6	6	2	..
Baraga	917	183.4	7,447	1,489	5	..	2	5	5	1
Barry	556	20.6	22,721	841	27	2	10	19	9	2
[1]Bay	413	5.7	72,515	929	78	2	31	54	48	7
Benzie	314	31.4	11,333	1,133	10	..	5	6	5	..
Berrien	569	6.5	56,874	653	87	7	31	68	38	7
Branch	497	15.1	25,605	775	33	1	9	17	18	2
[2]Calhoun	693	4.6	61,984	413	150	21	76	110	97	18
Cass	493	19.7	20,624	824	25	..	11	18	16	7
Charlevoix	411	25.7	22,951	1,434	16	..	10	11	5	2
Cheboygan	725	48.3	19,592	1,306	15	..	5	8	7	4
Chippewa	1,573	50.7	26,759	863	31	..	14	20	22	4
Clare	582	52.9	9,883	898	11	..	4	6	2	2
Clinton	571	19.0	23,129	770	30	..	15	21	25	3
Crawford	575	143.7	4,656	1,164	4	..	2	3	3	1
Delta	1,169	43.3	34,653	1,283	27	1	13	23	19	5
Dickinson	776	48.5	22,448	1,403	16	..	8	12	12	3
Eaton	571	11.2	30,499	598	51	2	14	30	31	3
Emmet	485	26.9	20,479	1,138	18	1	6	12	10	..
[3]Genesee	655	5.7	81,163	705	115	3	68	93	92	22
Gladwin	519	86.5	9,762	1,627	6	..	3	4	3	..
Gogebic	1,133	42.0	28,147	1,042	27	..	18	23	17	5
Grand Traverse	467	18.7	26,197	1,047	25	2	11	17	18	1
Gratiot	579	17.0	28,820	847	34	1	13	22	26	3
Hillsdale	597	11.5	29,673	589	52	..	12	34	27	6
Houghton	1,019	14.5	104,181	1,488	70	1	50	60	47	12
Huron	854	14.7	35,192	606	58	1	14	48	50	1
[4]Ingham	553	4.7	63,157	535	118	7	54	81	77	12
Ionia	579	12.3	33,550	713	47	1	21	30	34	5
Iosco	570	95.0	9,752	1,625	6	..	3	3	3	1
Iron	1,200	63.1	19,669	1,035	19	..	9	14	5	1
Isabella	572	24.9	23,207	1,009	23	1	5	17	11	3
[5]Jackson	707	7.8	57,225	635	90	2	53	64	53	10
[6]Kalamazoo	562	5.0	72,191	638	113	12	60	80	75	12
Kalkaska	573	95.5	8,800	1,466	6	..	2	4	4	..
[7]Kent	860	3.3	180,626	689	262	10	119	189	150	37
Keweenaw	554	46.2	10,031	835	12	1	5	8	7	2
Lake	579	144.7	4,939	1,234	4	..	2	2	2	..
Lapeer	666	20.2	26,033	788	33	..	19	20	26	..
Leelanau	338	56.3	10,644	1,774	6	..	2	6	2	..
Lenawee	743	10.0	47,907	647	74	4	25	41	41	13
Livingston	568	22.7	17,736	709	25	1	9	16	14	2
Luce	920	153.3	4,748	791	6	..	6	6	5	..
Mackinac	1,044	74.6	10,377	741	14	..	2	6	1	..
Macomb	472	8.3	32,606	572	57	3	22	42	33	12
Manistee	562	21.6	26,688	1,026	26	2	10	14	4	5
Marquette	1,870	41.5	50,753	1,127	45	..	24	37	31	8
Mason	494	29.0	23,981	1,410	17	1	5	11	7	..
Mecosta	571	30.0	19,466	1,024	19	..	7	14	14	4
Menominee	1,056	58.7	25,648	1,424	18	..	6	12	13	5
Midland	529	52.9	14,005	1,400	10	..	4	8	7	4
Missaukee	582	52.9	11.551	1,050	11	..	7	7	6	2
Monroe	573	17.9	33.035	1,032	32	1	11	22	21	3
Montcalm	724	17.6	32,069	782	41	2	18	27	26	6
Montmorency	561	93.5	4,135	689	6	..	2	8	6	3
Muskegon	504	8.5	43,161	731	59	2	36	46	40	6
Newaygo	851	60.8	20 348	1,453	14	..	4	10	6	..
Oakland	886	9.7	53,066	583	91	3	43	66	54	7
Oceana	543	20.2	19,645	1,091	18	..	7	14	11	1
Ogemaw	580	38.7	9,740	649	15	..	1	5	3	1
Ontonagon	1,333	133.3	10,439	1,043	10	..	7	9	7	2
Osceola	577	38.5	17,911	1,194	15	1	7	11	8	..
Oscoda	576	.....	2,434		No physicians reported					
Otsego	528	88.0	6,826	1,137	6	..	3	3	3	..
Ottawa	565	10.7	49,412	932	53	1	21	32	27	7
Presque Isle	678	75.3	13,021	1,446	9	..	5	9	9	1
Roscommon	538	538.0	2,627	2,627	1	..	..	1	1	..
[8]Saginaw	828	7.9	95,179	906	105	7	35	66	57	19
Saint Clair	710	9.7	52,341	717	73	4	22	49	51	3
Saint Joseph	503	15.7	26,674	833	32	1	11	25	14	3
Sanilac	976	28.7	33,930	998	34	..	8	22	19	4
Schoolcraft	1,207	172.4	9,258	1,322	7	..	..	6	6	..
Shiawassee	557	10.9	33,246	651	51	..	21	37	30	13
Tuscola	827	20.7	34,913	872	40	2	17	26	27	3
Van Buren	617	15.4	33,185	829	40	1	13	26	27	3
Washtenaw	704	4.0	44,714	255	175	11	98	135	84	43
[9]Wayne	620	0.4	1,008,859	683	1,483	58	462	1,246	918	262
Wexford	577	33.9	23,621	1,389	17	..	11	13	15	3
Totals	57,480	12.5	3,458,185	752	4,598	185	1,844	3,434	2,810	665

1. Includes Bay City, population 47,494; physicians 65 [M.R.C. 7].
2. Includes Battle Creek, population 28,801; physicians 109 [M.R.C. 14].
3. Includes Flint, population 52,159; physicians 85 [M.R.C. 17] .
4. Includes Lansing, population 39,005; physicians 89 [M.R.C. 11].
5. Includes Jackson, population 34,730; physicians 71 [M.R.C. 9].
6. Includes Kalamazoo, population 47,364; physicians 94 [M.R.C. 10].
7. Includes Grand Rapids, population 125,759; physicians 225 [M.R.C. 29].
8. Includes Saginaw, population 54,815; physicians 75 [M.R.C. 17].
9. Includes Detroit, population 554,717; physicians 1,382 [M.R.C. 249].

HONOR ROLL

Allegan County

St un; Robert Page Stark; Howard Wallace
V ludnutt. PLAINWELL—Willard Robert
J. Walker.

Alpena County

ALPENA—Clarence Mason Williams.

Antrim County

ATWOOD—Bernard J. Beuker. CENTRAL LAKE—Edward Wilbur Vis. EASTPORT—Versile Mornington Gates. ELK RAPIDS—Louis Norman Yerkes. MANCELONA—Worth W. Walton.

Baraga County

PEQUAMING—Frank Fremont Marshall.

Barry County

DELTON—Maurice James Cross. MIDDLEVILLE—Birge Carlton Swift.

Bay County

BAY CITY—Frederick Smith Baird; Frank Winne Brown; Edward Goodwin; Edward Spaulding Huckins; Roy C. Perkins; Floyd H. Randall; Royston Earl Scrafford.

Berrien County

BARODA—Louis Andrew King. BENTON HARBOR—Myron Geo. Becker Jr.; Carl Apperson Mitchell; Warren P. Morrill; Burton Lewis Stevenson. BRIDGEMAN—David Littlejohn COLOMA—Spencer Van Barnum.

Branch County

COLDWATER—Wilbur Aaron Griffith. UNION CITY—Walter Wm. John Bien.

Calhoun County

ALBION—Edwin M. Chauncey; George C. Hafford. ATHENS—Elijah Van Camp.

BATTLE CREEK—James Thomas Case; James Adam Elliott; Robert Vincent Gallagher; Wilfred Haughey; Jesse James Holes; Awra Andrews Hoyt; Karl High Kellogg; Theodore Kolvoord; Asa Charles McCurdy; Willard Nichols Putnam; Kendall Brooks Rees; Albert Howard Ross; Leland Herbert Tower; Carl George Wencke. BEDFORD—Kendall Brooks.

Cass County

CASSOPOLIS—Edgar Clarence Dunning; Chas. Maxwell Harmon; James Henry Kelsey. DOWAGIAC—Walter Stokes Sharpe. MARCELLUS—Ralph Phillip Jones.

Charlevoix County

CHARLEVOIX—Allan Marshall Wilkinson. EAST JORDAN—Hugh William Dicken.

Cheboygan County

CHEBOYGAN—Arthur Julius Sahs. INDIAN RIVER—Lyle D. McMillan. MACKINAW—Allen Charles Tiffany. WOLVERINE—Archibald McKillop.

Chippewa County

FORT BRADY—Everett Allen Anderson. RUDYARD—Robert Douglass Scott. SAULT STE. MARIE—Emil Henry Webster; Rollin C. Winslow.

Clare County

CLARE—Arthur Robert Mussell; Burton Jay Sanford.

Clinton County

EUREKA—Myron Stephen Gregory. ST. JOHNS—Walter Abner Scott; Don Harry Silsby.

Crawford County

GRAYLING—J. Atwood Whitaker.

Delta County

ESCANABA—Harry J. Defnet; Victor Francis Ryan; Heming Oliver Lindholm; John Jos. Walsh. RAPID RIVER—John Lindsay Conover.

Dickinson County

CHANNING—Robert E. Hayes. FOSTER CITY—Gustavus W. Moll. IRON MOUNTAIN—Samuel Edwin Cruse.

Eaton County

CHARLOTTE—Stanley Allison Stealy. GRAND LEDGE—Wells Blakeslee Fillinger. VERMONTVILLE—Clyde L. D. McLaughlin.

Genesee County

CLIO—Benjamin Thomas Goodfellow. FLINT—Gordon Henry Bahlman; Chas S. Ballard; Myron William Clif; Henry Cook; Victor Henry de Somoskeoy; John W. Evers; George Reinhold Goering; Harry Clark Hackman; Wm. Henderson Marshall; Carl Frederick Moll; Ray S. Morrish; Arthur Venton Murtha; Robert Leo Phillips; George Kenneth Pratt; Herbert Elmer Randall; Floyd Albert Roberts; Walter Henry Winchester. GRAND BLANC—Wells Cook Reid. GOODRICH—Frederick J. Burt. SWARTZ CREEK—Albert Briton Clark; James Houston.

Gogebic County

IRONWOOD—Charles David Collins; Edward Hayes Kelly. WAKEFIELD—Theodore Suante Crosby; Donald E. MacPhail. WATERSMEET—George James Curry.

Grand Traverse County

TRAVERSE CITY—Wm. Daniel Mueller.

Gratiot County

ALMA—Cyrus Bunting Gardner; Arthur Alma McNabb. ITHACA—Clarence Edw. Burt.

Hillsdale County

HILLSDALE—Burt F. Green; Elihu Arthur Martindale; Harry Clay Miller. JONESVILLE—Ira James Stoner. LITCHFIELD—William Hodgines Atterbury. PITTSFORD—William Edward Alleger.

Houghton County

CALUMET—John Francis Barton; James Rubeo Lisa; Peter Duncan MacNaughton; John D. McKinnon; Bertram Henry Olmstead. DOLLAR BAY—Albert Roache Pearce; Raymond Moralee Schulte. HOUGHTON—William Roy Bridgman; Robert Bruce Harkness; Alfred C. LaBine. LAURIUM—Murdoch M. Kerr; James Rhines.

Huron County

PIGEON—Alfred Elihu W. Yale.

Ingham County

LANSING—Chauncy Levi Barber; Henry Shank Bartholomew; Wayne Alexander Cochran; Marshall L. Cushman; Marinus L. Holm; James Alton Humphrey; Ray Richmond McCrumb; Harold Abind Miller; Forest Ralph Ostrander; Arthur Elliott Owen; Milton Shaw. STOCKBRIDGE—L. A. Woodlock.

Ionia County

IONIA—Verner H. Kitson; Julius Henry Powers; Perry Christian Robertson. LAKE ODESSA—Frederick L. Morse; Nelson McLaughlin.

Iosco County

TAWAS CITY—Charles Vernor Crane.

Iron County

IRON RIVER—Wilhelm Carl Liefert.

Isabella County

BLANCHARD—Ralph Ernest Dawson; *Theodore Peter Vander Zalm.* MT. PLEASANT—Chas. D. Pullen.

Jackson County

BROOKLYN—Cortlandt Whitehead Schepeler. JACKSON—Warren Bradley Anderson; Herman Duane Brown; Randall N. Cooley; Cuthbert Earl De May; Chas. Rowse Dengler; *Harold Lee Hurley*; John Joseph McCormick; Miar John McLaughlin; James Andrew McQuillan.

Kalamazoo County

AUGUSTA—Robt. Eaton Weeks. KALAMAZOO—Ross Uriah Adams; Ralph E. Balch; Jerome Francis Berry; Orton H. Clark; Ward Eugene Collins; Leo J. Crum; Dan Holton Eaton; *Wm. Geo. Hoebeke*; Rosco G. Leland; Louis Desenberg Stern. *RICHLAND*—William Newton Kenzie.

Kent County

ADA—Raymond C. Breece. EAST GRAND RAPIDS—Fred Plumer Currier Jr.

GRAND RAPIDS—Louis Barth; Horace J. Beel; Henry M. Blackburn; Alexander M. Campbell; *Louis Henry Chamberlain*; John Ralph Coryell; Clyde Wilson Deaver; Willis L. Dixon; John Clinton Foshee; Howard A. Grube; John Thompson Hodgen; John Newell Holcomb; *Wm. Aloysius* Hyland; John Carl Kenning; Frank Cameron Kinsey; Milford Arthur *Leach*; Wm. De Voe Lyman; Wm. Robt. Manlove; *Alex. M. Martin*; *Louis Thomas O'Brien*; Henry John Pyle; Omer Roan; Leon Edmund Sevey; *Ansel Brooks Smith*; Richard Root Smith; Roland Egbert Toms; *Sumner Merill Wells Jr.*; Joseph Burgess Whinery; William E. Wilson. *LOWELL*—Aaron C. Button; *Hans Peter Gotfredsen*. GRANDVILLE—Jacob Daniel Brooks. SOLDIERS' HOME—Howard A. Grube.

Keweenaw County

MOHAWK—Albert Roling Tucker. PHOENIX—John Leo Kelliher.

Lenawee County

ADRIAN—Artemus Ward Chase; *Ara Bird Hewes*; Esli Terrill Morden; Leo John Stafford; Mahlon R. Sutton; George Mitchell Lochner. CLINTON—Robert Anthony Davis. DEERFIELD—Guy Malverton Claflin. MORENCI—Van Dale Barnes. ROLLING—John Leonard Meddaugh. SAND CREEK—William Henry Meddaugh.

ADRIAN—John Perry Bland.

CLINTON—Carroll Semans Thomson.

Livingston County

HOWELL—Vern N. Richesen. PARSHALLVILLE—William John Rynearson.

Macomb County

MT. CLEMENS—Henry G. Berry; Harold Arthur Kirkham; Charles Allen Martin; Harry Ferris Taylor; Russell William Ullrich; Arthur Jay Warren. ROMEO—Robert McKay Greenshields; Edgar J. Miller; Milton Case Smith. WASHINGTON—Curenus B. Lockwood.

ROMEO—Walter Robert Taylor Sharpe.

MEMPHIS—George Waters.

Manistee County

BEAR LAKE—Ward Herman Norconk. COPEMISH—Russell Ragan Huston. MANISTEE—Elmer Alfred Gunderson; Harlen MacMullen; Andrew A. McKay.

Marquette County

GWINN—David Christian Eisele. ISHPEMING—Albert V. Deventer Brrden. MARQUETTE—Howard T. Carriel; Roscoe Conkling Main; Harold Boyce Markham. MICHIGAMME—Isaiah Sicotte. NEGAUNEE—Ira A. Abrahamson; Emile Cyrus Houle.

Mecosta County

BIG RAPIDS—Wm. Temperance Dodge; Rolla George Karshner; Glen Dewey Ransom; Gordon Hurst Yeo.

Menominee County

MENOMINEE—Calvin Ross Elwood; Walter Raleigh Hicks; Stephen Codding Mason; Earl Vinton McComb; Henry Thomas Sethney.

Midland County

COLEMAN—Chas. Vernell High Sr. EDENVILLE—John Elmer Heslop. MIDLAND—James Henry *Johnson*; *Rene James St. Louis.*

Missaukee County

LAKE CITY—*Nelson Abbott*; John Foge Doudna.

Monroe County

DUNDEE—Hugh Rannells Hildebrant. MONROE—*Herbert Wm. Landon*; *Frederick Clayton Thiede.*

Montcalm County

CARSON CITY—*Don* Vilrette Hargrove. GREENVILLE—Albert Stewart Barr; Albert James Bower. HOWARD CITY—Noble *William* Miller. LAKEVIEW—Lee Earl Kelsey. STANTON—Mortimer E. *Danforth.*

Montmorency County

HILLMAN—George Fenton Lister; Albert Joachim Schmaller. LEWISTON—Archie Currie MacKinnon.

Muskegon County

MONTAGUE—Henry Augustus Kling. MUSKEGON—Constant M. *Collignon*; Burns Rush Eastman; Leslie Albert van der Linde. WHITEHALL—Henry S. Cole; William Louis Hercik.

Oakland County

BIRMINGHAM—Lloyd Gully Campbell; George Patterson Raynale. CLARKSTON—Russell Graham Edgar. OXFORD—George William MacKinnon. PONTIAC—Lucius Augustine Farnham; Ellsworth Orton. ROCHESTER—*Charles* Spurgeon Strain.

Oceana County

HART—*Clinton Day.*

Ogemaw County

WEST BRANCH—Robert Jay Beeby.

Ontonagon County

EWEN—Edward Alexander Florentine. GREENLAND—Edwin Jame *Evans.*

Ottawa County

BERLIN—John Jay Miller. COOPERSVILLE—Harry Lieffers. GRAN HAVEN—Cornelius John Addison. HOLLAND—*George* Henry Thoma William Westrate. NUNICA—Clayton *Andrew* White. ZEELAND—Jo DePree.

Presque Isle County

ONAWAY—Joseph Sill; *Fred.* William Wastell. POSEN—Fred Perte Nevius. ROGERS CITY—*William* Woodborough Arscott.

Saginaw County

BIRCH RUN—Harvey *Benjamin* McCrory. BURT—George Wesley Peart.

SAGINAW—George *Lavorious Alger*; James Deacon Bruce; Benj. Franklin A. Crane; *Walter Alexander* De Foe; Wm. Franklin English; Bernhard Friedlaender; *Leon Brayton* Harris; Matthew Kollig; Alexander Reid McKinney; Henry *John* Meyer; Wm. Louis Miller; James L. Passmore; Norman James *Pike*; *Emil Philip W.* Richter; Bert Bessac Rowe; John Thomas Sample; Roy S. Watson.

Sanilac County

DECKER—Clayton Gregg Woodhull. MARLETTE—Raymond G. Tuck. *PECK*—John Clyde Webster. SNOVER—Hugh H. Angle.

Shiawassee County

DURAND—James Arthur Rowley. BYRON—Hermon Edw. Boice; Robt. Ray Fox. HENDERSON—Thos. Grover Amos; Glenn Taylor Soule. OWOSSO—Alfred F. Arnold; *James* Johnson Haviland; Harold A. Hume; Jesse Obed Parker; *George Peter Sackrider*; Egerton Thomas Wilson. SHAFTSBURG—William Herbert Dunham. VERNON—Arden Nathan Howe.

St. Clair County

ALGONAC—*Walter Elijah* Bostwick. ST. CLAIR—Frank Vern Carney. YALE—Wm. Guthrie Wight.

St. Joseph County

BURR OAK—John Joslyn Kelley. COLON—Wm. Eck Doran. THREE RIVERS—Arthur W. Scidmore.

Tuscola County

CARO—Frederick P. *Bender.* *MILLINGTON*—Wynne Clark Garvin. RICHVILLE—Ottomar Von Renner.

Van Buren County

BANGOR—Norman Dwight Murphy. HARTFORD—John *Duncan Stewart.* *LAWRENCE*—Duane Wesley Crankshaw.

Washtenaw County

ANN ARBOR—Robert H. Baker; Hugh McDowell Beebe; *Clarence Austin Berge*; James Fleming Breakley; Roy Bishop Canfield; Otis Merriam Cope; *Robert H. Criswell*; *Roland S. Cron*; Charles Beyland G. de Nancrede; Richard Wm. Denney; Carl Walter Eberbach; Joseph Alexander Elliott Jr.; *Nellis Barnes Foster*; *Albert Carl Furstenberg*; *Evan Griffith Galbraith*; *Edwin Carl Ganzhorn*; *John L. Gates*; *William Henry Gordon*; *Harry H. Hammel*; Howard Morton Holcombe; *Robert Scott Ideson*; *Arnold F. Jacoby*; Hubert Rudolph John; Harthur Lewis Keim; *Lyle Boyle Kingery*; Rollan Walter *Kraft*; *Maurice Clock Loree*; Harry M. Malejan; Russell A. A. Oldfield; *John Jeremiah O'Leary*; Reuben Peterson; Rudolph Herman Ruedemann; Walter Neale Salisbury; John Wesley Sherrick; *Floyd Raymond Town*; *Geo. Douglas Treadgold*; Warren Taylor Vaughan; Damon Orian Walthall; Udo Julius Wile.

SALEM—Edward Payson Waid. YPSILANTI—Howard Isaac *Post*; Thomas Robert Whitmarsh. WHITMORE LAKE—Guy Garland Alway.

Wayne County

DETROIT—De Witt Carter Adams; Edward Joseph Agnelly; Herman Fred Albrecht; Frank Clinton Anderson; *Warren L. Babcock*; Frederick W. Baeslack; Max Ballin; Don C. Bartholomew; *Charles Barton*; *Robert J. Baskerville*; Robert Beattie; Harold A. Beck; *Clarence Herbert Belknap*; William Oscar Benjamin; Zina Bradn Bennett; *Harry S. Berman*; Isadore I. Bittker; Fred Horton Blanchard; Jacob Rolland Bolasny; Edmund W. Bolio; Ralph Hug Bookmyer; Richard F. *Boonstra*; *Henry* Robt. Boyes; Frank B. Broderick; Clark D. Brooks; William Horatio Browne; Wm. S. Brownell; Bruno Berthold Brunke; *John D. Buck*; Frederick G. Buesser; Glenn A. Bulson; John Knox *Burns Jr.*; Lowell M. Bush.

Thomas P. Camelon; Geo. Henry Campan; *Duncan Alexander Campbell*; *Clarence Candler*; Edward K. Carmichael; Glenn Blish Carpenter; James G. Carr; Henry R. Carstens; John Henry Carstens; Albert Edward Catherwood; Aaron Lee Chapman; Clarence A. *Christensen*; Harold Francis Closz; Don Avon Cohoe; *Homer C.* Collins; Lannes Irving Condit; Ray Connon; Bernard Francis Corbett; Langdon T. Crane; Ernest Keys *Cullen*; *Hampton Pharr Cushman.*

Samuel Solomon Danziger; Milton Alfred Darling; Jos. Laudium Desrosiers; Harry Franklin Dibble; John Clinton Dodds; Daniel Raymond Donovan; Ira George Downer; David Bernard Downing; George Adam Drescher; Leo John Dretska; Adolph Ernst Dreyer; Charles Frederick DuBois.

Frederick Eakins; Clarence Henri Eisman; Rolland Renford Enser; Arthur William Erkfitz.

George E. Fay; Ray Leopold Fellers; Charles Joseph Foley; Antonio Joseph Font; Walter David Ford; Harry Edgar Fraser; George Edward *Frothingham.*

Claude Benjamin Gaines; August Ernst Gehrke; Isaac S. Gellert; William Stephen Gonne; John Whitlock Gordon; James Gostanian; Raymond Salot Goux; William Gramley; Hunter Lee Gregory; Thomas Reuben Keller Gruber; Samuel Charles Gurney.

Ernest William Haass; Carl Hanna; Beverly Drake Harison; Winfred Bronsart Harm; Albert Edward Harris; Earl R. Harris; John G. Harvey; James Ward Hawkins; Austin Wm. Heine; William Henderson; Preston *M. Hickey*; Louis J. Hirschman; George Hoffmeister; Arthur D. Holmes; Lawrence Nicholas Host; Abraham Willis Hudson; Harold S. Hulbert; Leroy Wetmore Hull; Willard Hunter Hutchins.

James W. Inches; Harry H. Jackson; *Byron Homer* Jenne; Alpheus Felch Jennings; Charles G. Jennings; Nathan Joseph Jessup; Morrell Mallory Jones.

Ladislaus Roman Kaminski; Zeno Leo Kaminski; Wm. James Kane; John Fredk. Kelly; Johnston Burnside Kennedy; William Young Kennedy; Frederick Clinton Kidner; Edw. David King; Paul Anthony Klebba; George Leo Koessler; Abraham Kovinsky; Albert Henry Krohn; Duffield Rey Kruger.

Alfred Daniel LaFerte; Rudolph Harold Lambert; Carl Niel Larsen; Bror Hjalmar Larsson; A. F. J. Lecklider; Ernest C. Lee; Henry Robt. Leibinger; Daniel James Leithauser; Alfred E. Lemon; Paul Herman Lippold.

Nelson MacArthur; Robert Bruce Macduff; Frank Benjamin MacMullen; Otis Bush Mallow; Vincent Samuel Mancuso; Walter Williamson Manton; Thomas Blaine Marsden; Robert Michael Martin; James Dwight Matthews; Kenneth Fuller Maxey; Emil Valentine Mayer; Willard D. Mayer; Frederick McAfee; Arthur McArthur; James Herald McCall; Wm. Raymond McClure; Carey P. McCord; Crawford Ward McCormick; Theodore Alexander McGraw Jr.; George Edwin McKean; Angus McLean; Henry Oliver McMahon; Charles H. Merrill; Ellsworth Paro Mills; Robert Conrad Moehlig; Stephen Gregory Mollica; Harold L. Morris; Walter Muellenhagen; Charles Robert Mueller Jr.; Thomas F. Mullen.

Arthur Joseph Neumann; Frederick Henry Newberry; Arthur Wilmot Newitt; Harry J. Noble; Ralph Arthur Norris.

William Austin O'Brien; Harold Fredk. Ohrt; Geo. Vernon Oill; Robert W. Goldsborough Owen.

Leon Edward Pangburn; Walter Robert Parker; Grover Cleveland Penberthy; Orlando Wm. Pickard; Lyman Justin Pinney; George Edward Potter; Presley Louis Pound; William Henry Price; Wynand van Korleer Pyle.

Octavius Marion Randall; Claude Burton Ray; Harry Walter Reed; Heinrich Albert Reye; James Milton Robb; Paul Charles Rohde; Herman Hjalmar Runo; Frank Leith Ryerson.

Homer E. Safford; Wm. Graham Schlegelmilch; Harry B. Schmidt; Ernest Charles Schultz; James Bradford Seeley; Ward Francis Seeley; Alphons Mahlon Shafer; Reed Albert Shankwiler; Lyle Orting Shaw; Harold Koch Shawan; William LaRue Sherman; Burt R. Shurley; Arthur Ralph Smeck; Alba Lee Smith; Clarence Vernon Smith; Eugene Smith Jr.; Frank Harvey Smith; Frederick Janney Smith; Theodore Henry Smith; Clarence Stefanski; Frank T. F. Stephenson; Alexander Meiklejohn Stirling; Lindley H. Stout; Luther Hinton Stout; Frank Suggs; Hugh Albert Sullivan; Angus Price Sutherland.

Rolfe Tainter; Griffith Arthur Thomas; Arthur Rudolph Timme; Charles Lewis Tomsu; Harry N. Torrey; Emmett Calvin Troxell; Arthur Turner.

Clyde Roger Van Gundy; James A. Van Horne; George Van Rhee; Colin Campbell Vardan; John Walter Vaughan; Victor C. Vaughan Jr.; Milton D. Vokes.

Frank Banghart Walker; Jos. A. Wall; Charles R. Walsh; Frank Norman Wilson; George Wayne Wilson; Robert A. Wollenberg; Grover C. Wood.

Harry Benjamin Yoh; John Campbell Young.

DETROIT—Russell Landram Haden; James Leonidas Hawkins; Mose Milton Hyman; Frederick Cleland Mayne; James William McEwan; Alonzo Bond Persley.

ELOISE—Joseph Harvey Chance. HAMTRAMCK—Robert Henry Carmichael. HIGHLAND PARK—Martin William Caveney; George Samuel Feden; Richard Henry Juers. NORTHVILLE—Thomas Burnfield Henry. REDFORD—Lewis Nelson Tupper; Roy Du B. Tupper. TRENTON—Howard Bligh Kinyon. WAYNE—Romeo Horatio Earle. WYANDOTTE—Glen Long Coan; William H. Honor; Joseph G. Knapp.

Wexford County

MANTON—Paul W. Bloxsom. MESICK—John Fordyce Gruber; Albert Edw. Stickley.

MINNESOTA STATE MEDICAL ASSOCIATION

Officers 1917-18

Arthur J. Gillette, President.......St. Paul
Vice Presidents—
O. C. Strickler.......New Ulm
E. H. Frost.......Willmar
M. J. Lynch.......Minneapolis
Thomas S. McDavitt, Secretary.......St. Paul
Earle R. Hare, Treasurer.......Minneapolis

Councilor Districts and Officers

First District.—Clay, Becker, Wilkin, Ottertail, Douglas, Grant, Polk, Marshall, Kittson, Roseau, Norman, Pope, Red Lake, Stevens, Traverse and Big Stone counties. C. E. Dampier, Councilor, Crookston.

Second District.—Aitkin, Beltrami, Cass, Crow Wing, Hubbard, Morrison, Todd and Wadena counties. J. G. Millspaugh, Councilor, Little Falls.

Third District.—Ramsey, Washington, Chisago, Pine, Millelacs, Isanti, Kanabec, St. Louis, Lake, Carleton, Cook and Itasca counties. W. A. Dennis, Councilor, St. Paul.

Fourth District.—Hennepin, Anoka, Sherburne, Meeker, Wright, Stearns, Benton, Kandiyohi and Swift counties. Richard J. Hill, Councilor, Minneapolis.

Fifth District.—Renville, Chippewa, Lac Qui Parle, Yellow Medicine, Sibley, Brown, Redwood, Lyon and Lincoln counties. C. E. Persons, Councilor, Marshall.

Sixth District.—Pipestone, Rock, Nobles, Murray, Cottonwood, Jackson, Faribault, Martin and Watonwan counties. F. R. Weiser, Councilor, Windon.

Seventh District.—Nicollet, Dakota, Lesueur (west half), McLeod, Scott, Carver, Goodhue, Rice and Wabasha counties. Franklin A. Dodge, Councilor, Le Sueur.

Eighth District.—Blue Earth, Dodge, Freeborn, Houston, Fillmore, Le Sueur (east half), Mower, Olmstead, Steel, Waseca and Winona counties. Hugh F. McGaughey, Councilor, Winona.

HONOR ROLL

Aitkin County

AITKIN—Benjamin William Kelly.

Becker County

AUDUBON—Oluf Johan Pederson. RONSFORD—James T. Ballou. WHITE EARTH—Alick Bernstein; Thomas Frank Rodwell.
FINLAYSON—William Henry Conner.

Beltrami County

BEMIDJI—Earl Howard Marcum. PONEMAH—Lunn Geophrey Neal. RED LAKE—Richmond Favor Jr.
BIMIDJI—Daniel F. McCann, Jr.

Benton County

RICE—Clarence Addison Rathbun.

Blue Earth County

MANKATO—Julian Adolph Hielscher; Adolph G. Liedloff; Hiram John Lloyd; Chelsea Carroll Pratt; Albert Johnson Wentworth. VERNON CENTER—Thomas Gage Clement.

MINNESOTA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Aitkin	1,820	305.0	13,019	2,169	6	..	4	4	5	1
Anoka	440	76.5	13,351	2,225	6	..	3	5	2	..
Becker	1,340	61.2	20,991	999	21	..	8	17	10	5
Beltrami	3,822	201.1	27,341	1,439	19	..	11	17	10	4
Benton	405	57.8	12,857	1,836	7	..	4	5	5	1
Bigstone	491	54.5	9,830	1,092	9	..	6	7	5	..
Blue Earth	762	16.5	29,337	637	46	6	24	38	26	6
Brown	612	32.2	20,387	1,073	19	1	10	14	17	3
Carlton	867	66.6	23,065	1,774	13	1	8	9	8	2
Carver	376	34.1	17,455	1,586	11	1	8	7	1	1
Cass	2,101	150.2	14,425	1,030	14	..	8	12	8	3
Chippewa	591	65.6	14,158	1,573	9	..	6	6	7	1
Chisago	427	47.4	13,747	1,527	9	..	5	7	9	..
Clay	1,043	65.1	20,881	1,305	16	..	11	12	11	3
Clearwater	1,019	254.7	9,713	2,428	4	..	3	4	..	2
Cook	1,495	1495.0	1,719	1,719	1	..	..	..	..	..
Cottonwood	649	91.4	13,076	1,868	7	..	7	7	7	1
Crow Wing	1,057	39.1	18,766	695	27	..	17	22	17	5
Dakota	599	33.2	27,681	1,537	18	1	9	10	10	1
Dodge	440	40.0	12,094	1,099	11	..	4	7	8	1
Douglas	648	38.1	17,669	1,037	17	..	13	15	11	4
Faribault	719	36.2	19,949	1,049	19	..	12	14	14	2
Fillmore	868	37.7	25,680	1,116	23	..	18	23	22	3
Freeborn	735	35.0	22,606	1,076	21	1	11	18	15	4
Goodhue	767	23.0	32,001	1,103	29	1	13	21	15	2
Grant	553	39.5	9,244	660	14	1	10	11	5	2
[1]Hennepin	565	0.8	410,227	638	612	23	362	503	394	104
Houston	570	71.2	14,297	1,787	8	..	6	7	7	..
Hubbard	978	106.4	12,204	1,356	9	..	4	4	2	1
Isanti	442	63.1	13,300	1,900	7	..	5	6	2	..
Itasca	2,730	160.5	27,338	1,608	17	..	8	14	10	2
Jackson	702	46.8	14,491	966	15	..	8	11	12	2
Kanabec	534	267.0	7,809	3,904	2	..	2	2	1	..
Kandiyohi	801	50.0	19,373	1,210	16	..	11	13	13	2
Kittson	1,111	138.8	10,967	1,370	8	..	5	6	4	1
Koochiching	3,111	349.0	10,217	1,135	9	2	2	9	4	2
Lac Qui Parle	790	60.7	16,271	1,251	13	..	8	9	8	2
Lake	2,099	349.8	10,462	1,743	6	..	4	5	4	1
Lesueur	466	22.1	18,609	886	21	..	11	14	13	6
Lincoln	535	66.8	10,536	1,317	8	..	6	6	6	..
Lyon	708	37.2	16,546	870	19	..	8	15	13	5
McLeod	496	24.8	18,691	934	20	..	13	14	14	3
Mahnomen	572	114.4	3,249	649	5	..	1	1	1	1
Marshall	1,788	198.6	16,805	1,867	9	..	6	7	7	3
Martin	719	44.9	17,942	1,121	16	..	8	12	13	6
Meeker	621	27.0	17,022	740	23	..	11	11	9	2
Millelacs	583	44.8	12,630	971	13	..	4	10	6	2
Morrison	1,143	63.5	24,901	1,383	18	..	10	13	8	..
Mower	711	26.3	22,861	846	27	1	12	23	19	3
Murray	704	70.4	11,753	1,175	10	..	7	10	9	2
Nicollet	443	29.5	14,125	941	15	1	5	11	14	2
Nobles	722	45.1	15,412	963	16	..	8	11	12	4
Norman	860	86.0	13,446	1,344	10	..	6	9	2	1
Olmsted	666	45.9	22,497	155	145	3	100	131	82	58
Ottertail	2,039	56.6	46,519	1,292	36	..	21	30	22	4
Pennington	607	60.7	10,983	1,098	10	..	6	8	6	1
Pine	1,413	128.4	19,039	1,730	11	..	8	9	7	2
Pipestone	469	33.5	9,762	668	14	1	6	10	9	3
Polk	1,979	69.9	36,419	1,300	28	..	18	23	23	2
Pope	693	69.3	12,869	1,286	10	..	4	9	6	7
[2]Ramsey	161	0.4	262,450	748	351	3	198	257	233	53
Red Lake	432	72.0	7,689	1,281	6	..	2	2	4	1
Redwood	881	61.5	19,274	1,376	14	..	11	11	11	2
Renville	978	65.2	23,123	1,541	15	..	11	14	12	3
Rice	495	16.5	25,911	839	30	2	16	25	24	4
Rock	492	70.2	10,626	1,518	7	..	4	6	5	1
Roseau	1,670	208.7	14,509	1,813	8	..	4	3	3	..
[3]Saint Louis	6,503	31.2	221,920	1,082	205	6	125	168	133	18
Scott	366	24.4	14,888	992	15	..	7	12	13	3
Sherburne	448	89.6	8,759	1,751	5	..	4	5	4	1
Sibley	585	48.7	15,540	1,295	12	..	9	9	8	1
Stearns	1,362	29.6	50,119	1,089	46	..	23	35	32	10
Steele	431	26.9	16,146	1,009	16	..	8	11	12	2
Stevens	564	80.5	8,293	1,184	7	..	4	5	5	2
Swift	741	61.7	12,949	1,079	12	1	5	9	4	1
Todd	955	73.4	24,277	1,867	13	..	6	7	9	..
Traverse	568	94.6	8,395	1,399	6	..	6	6	3	3
Wabasha	541	28.8	18,554	976	19	..	14	17	15	3
Wadena	538	48.9	9,185	835	11	..	5	7	8	1
Waseca	431	43.1	13,466	1,346	10	..	5	10	9	1
Washington	397	17.2	26,013	1,131	23	..	7	14	12	1
Watonwan	434	54.2	11,382	1,823	8	..	5	8	7	1
Wilkin	745	149.0	9,780	1,956	5	..	5	5	4	2
Winona	637	19.3	33,398	1,012	33	1	16	22	23	6
Wright	691	28.7	28,082	1,170	24	..	12	18	12	4
Yellow Medicine	749	49.2	15,991	1,066	15	..	5	10	6	1
Totals	80,856	31.7	2,286,341	897	2,548	57	1,454	1,992	1,621	416

1. Includes Minneapolis, population 373,448; physicians 621 [M.R.C. 104].
2. Includes St. Paul, population 252,465; physicians 345 [M.R.C. 52].
3. Includes Duluth, population 97,077; physicians 109 [M.R.C. 10].

Brown County

NEW ULM—Otto John Seifert. SLEEPY EYE—Abraham Franklin Strickler. SPRINGFIELD—William Arnold Meierding.

Carlton County

CLOQUET—Virgil D. Guittard; Franklin W. S. Raiter.

Carver County

WACONIA—William John Stock.

Cass County

BACKUS—Albert Evan Williams. CASS LAKE—Samuel Reed Fraker. STATE SANATORIUM—Guy Breisford.

Chippewa County

WATSON—Seth Edwin Gilkey.

Clay County

BARNESVILLE—*Alphonse* Cyr; Charles Henry *Patterson.* MOORHEAD—Victor Ernest *Verne.*

Clearwater County

BAGLEY—Peter Cornelius Bjorneby. GONVICK—John Stevens.

Cottonwood County

JEFFERS—Charles Daniel Richmond.

Crow Wing County

BRAINERD—George I. Badeaux; Parker Lloyd Berge. CROSBY—Ralph Justin Sewall. DEER WOOD—George Melville Sewall. RIVERTON—Fred Foster Stocking.

Dakota County

HASTINGS—Rudolf Henry Wald.

Douglas County

ALEXANDRIA—Linwood Melrose *Keene*; Roy Edwin Swanson; Irving *George Willrout.* OSAKIS—*William Howard Hengstler.*

Faribault County

BRICOLYN—Oliver *Eugene Stewart.* *WELLS*—Stewart *Harry Anderson.*

Fillmore County

PRESTON—*Adolph* Edward De Tuncq Jr. SPRING VALLEY—Edgar Raymond Sather. WYKOFF—James *Douglas* Walker.

Freeborn County

ALBERT LEA—Byron A. Kamp; Jonas Risting Nannestad; Solomon *Francis Rudolf.* EMMONS—*Arthur* Irving *Arneson.*

Goodhue County

CANNON FALLS—Paul Richard Hankee. RED WING—Frederick Nikolai Bjerken.

Grant County

ASHBY—Auvigne Mason Randall. ELBOW LAKE—Albert Ingvald Haugen.

Hennepin County

HOPKINS—Minor Morris. *LONG LAKE*—Winfield Scott Nickerson. MINNEAPOLIS—James Kerr *Anderson*; *Jacob* Fowler Avery.

Louis Benedict Baldwin; Stephen Henry Baxter; Archibald H. Beard; John Warren Bell; *Harley G. Bickford*; Francis Gilman Blake; Paul *Francis Brown*; Herbert Arthur Burns; John Butler Jr.

Verne Seymour Cabot; Don F. Cameron; Walter Edward Camp; William G. Carhart; William Mack Chowning; Gordon McCall Clark; Charles *Edward Connor; James Frank Corbett*; Richard Raymond Cranmer.

Walter Henry Darling; Lloyd Thomas David; Richard Irving Dorge; *Aloysius Stephen* Fleming.

Bernard *James* Gallagher; Emil Sebastian Geist; Paul William Giessler; Paul Bernard Gillespie; Ernest George Gilmore; Earl William Gilroy; Harold Leroy Goss; Ralph A. Gowdy; Walter Edward Grempler.

Erling Wilhelm Hansen; Henry Charles Hansen; Abraham *Irving* Haskell; Frederick Eugene Haynes; Arthur Trautwein Henrici; Seth Evelyn Howard.

Albert Eugene Johann; Norton Theodore Johnson; Reuben *Alford* Johnson; Richard Newton Jones; Alexander Josewich.

Charles Herbert Keene; Oscar Miller Klingen; Ralph Thomas Knight; Louis Robert Koller.

Rae Thornton La Vake; Arthur Ayer Law; John William Lee; Leslie Earl Luehrs; Frank Benjamin Mach; John Silliman Macrice; Stanley Robert Maximer; Thomas Francis McCormick; Charles Fergus McCusker; James *Alvin McLaughlin*; John William Mintener; Virgil Harrison *Moats; Frederick Paul Moersch*; Angus Washburn Morrison; Herbert E. Morriss.

Joe Mullineaux Neal; Russell R. Noice; Gustaf Theodore Nordin; James Montgomery Northington; Bernt Odegaard; Harry Oerting; *Trygve* Oftedal.

Edw. Ludwig Paulsen; Reuben M. Pederson; Ralph St. John Perry; *Paul James Preston.*

Charles Anthony Reed; Douglas Ford Robbins; Harold Eugene Robertson; John P. Rosenwald; Henry H. Sellers; John Chandler Sessions; Morse Joseph Shapiro; Daniel Marsh Shewbrooks; Harvey Maurice Slater; Taylor Sivens Smith; John Elford Soper; Joseph Aloysius Stoeckinger; Joseph Stomel; Harold M. Stone; Adolph G. Sund.

Lewis Leonard Ten Broeck; David Owen Thomas; *Gilbert Joshua* Thomas; Frank Chisholm Todd.

Henry Patrick Wagener; Paul Alson Ward; *Solon* Marx White; Hugh Spaulding Willson; Paul William Wipperman.

MINNEAPOLIS—Carl W. Paulson; Max Scham; Benjamin Joseph Shalett; Philip H. Wolfram.

Hubbard County

NEVIS—George Earle McCann.

Itasca County

BRAHAM—Theodore Herbert Dedolph. COLORAINE—Roderick Frederick McHugh.

Jackson County

JACKSON—Ursus Victor Portmann. LAKEFIELD—John Townsend Rose.

Kandiyohi County

NEW LONDON—Henry Virgil Hanson. WILLMAR—Harry E. Canfield.

Kittson County

LANCASTER—Gustav William Dahlquist.

Koochiching County

INTERNATIONAL FALLS—Jenner P. Chance; Robert Hugh Monahan.

Lac Qui Parle County

FARIBAULT—Adolph Melancthon Hanson. MADISON—Walter Nordal

Lake County

SECTION THIRTY—Gordon Griffith St. Clair.

Le Sueur County

LE SUEUR—Joseph Eloi LeClerc; Daniel William McDougald. MONTGOMERY—Joseph Owen McKeon. NEW PRAGUE—William John Kucera; William F. Mavertz. WATERVILLE—Harry Bennett Weinburgh.

Lyon County

BALATON—Charles Germo. COTTONWOOD—John Banks Robertson; Therfinn *Tharaldsen.* MINNEOTA—Gustaf *Larson.* TRACY—Warner Gleason Workman.

Mahnomen County

MAHNOMEN—*Erhard* Anton Rumreich.

Marshall County

MIDDLE RIVER—Robert Earl Spinks. WARREN—Baldwin Borreson.
NEWFOLDEN—George Luther Johnson..

Martin County

DUNNELL—Nels Philip Anderson. FAIRMONT—George Willard Dewey; Roy Chester Lowe; Gustav Herman Luedtke. TRUMAN—Erwin Otto Fitz; August Frederick Hunte.

McLeod County

GLENCOE—Merritt Whitacre Wheeler. HUTCHINSON—Henry Edwin Douglas. WINSTED—John Baptiste Clair.

Meeker County

LITCHFIELD—John Joseph Donovan; Carl J. Robertson.

Millelacs County

MILACA—Harry P. Bacon. *PRINCETON*—George P. Dunn.

Mower County

AUSTIN—Charles Crawford *Allen*; Fred Bruce Coleman; Clifford C. Leck.

Murray County

FULDA—Emil King. SLAYTON—Leon Arlington Williams.

Nicollet County

NICOLLET—Reinhart Gilbert *Olson.* ST. PETER—Jared Waldo Daniels.

Nobles County

ADRIAN—Carl Chamberlain Cowin. WILMONT—*Joseph* Dawes Waller; *Arthur Bent* Williams. *WORTHINGTON—Frank* Melville Manson.

Norman County

TWIN VALLEY—Charles Fremont Snell.

Olmstead County

ROCHESTER—Alfred Washington Adson; *Burton A. Baird*; Roy A. Barlow; D. M. Berkman; Wayne W. *Bissel*; *Samuel* Orr Black; Pio Blanco; Walter Meredith Boothby; *James C.* Brogden; Hermon Carey Bumpus; Charles M. Clark; *William Gregg Crumley*; Daniel Davis; Charles Herbert Doe; Henry Lightfoot Douglass; William John Egan; Raymond *Myers Evans*; *Samuel* Thomas *Forsythe*; Andrew *Jackson* Goodwin; Stuart William Harrington; *James Martin Hayes*; Joseph Eugene Heard; Russell A. Hennessey; Clarence *Calvin Hoke*; Herman William Hundling; Verne Carlton Hunt; Edward Starr Judd; Lawrence Ewald Lepper; Walter *Ivan Lillie*; *Harry Matthew* Lowell; Frank Charles Mann; *Harold Edward Marsh*; Edward Vernon Metcalfe Mastin; William W. *Mattson*; *Charles Horace* Mayo; William James Mayo; James Robert *McVay*; *Frank Edward McEvoy*; Oliver Clarence Melson; Alexander Berkeley Moore; *Robert Daniel* Mussey; John Joseph O'Hearn; Paul Arthur O'Leary; John DeJarnette *Pemberton*; Frank Arents Plum; Lee Wesley Pollock; *Samuel Robinson*; Frederick Roman Sanderson; Charles Daniel Squires; *George Ellsworth Sutton*; Thaddeus L. Szapka; William Joseph Tucker; Porter *Paisley* Vinson; Charles Leonard Von Hess; Samuel Dinwiddie Weaver; William Ray Winnie; Henry William *Woltmann.*

Ottertail County

FERGUS FALLS—Shirley Dan *Folsom*; *David* Oscar Nathaniel Lindberg; *Ralph Moody Thurlow.* *UNDERWOOD*—William Andrew Lee.

Pennington County

THIEF RIVER FALLS—*Jesse Ellsworth Douglass.*

Pine County

HINCKLEY—Carleton Gale Kelsey. *POKEGAMA—Robert Glenn* Allison.

Pipestone County

JASPER—Albert Marinius Larson. PIPESTONE—Francis Lawrence Powers; *George* Fred Schmidt.

Polk County

CLIMAX—*Thomas Arneson.* GULLY—Axel Wilhelm Swedenburg.

Pope County

GLENWOOD—Michael Ambrose Desmond; James Ralph Elsey; Iver [illegible] LOWRY—Luther Lewellyn Gibbon; Howard Leo [illegible]—Charles R. Christenson. VILLARD—Richard [illegible]

Ramsey County

NORTH ST. PAUL—Ernest William Cowern. ST. PAUL—John S. *Abbott*; *Moses Barron*; Walter Douglas Brodie; Frank Earl Burch; *Paul* Floyd William Burns; Andrew Christiansen; Sol George Cohan; Paul Burns Cook; Wallace Cole; Albert D. Cornlea; Bronson Crothers; Karl Dedolph; Warren Arthur Dennis; Carl Bigelow Drake; James Nicholas Dunn; Edward John Engberg; James C. Ferguson; Everett K. Geer; Charles Harry Ghent; Joseph Marie Arthur Gravelle; *Walter Henry Halloran*; *John Comstock* Harding; Charles King Holmes; Joseph William Jesion; Elmer Mendelssohn Jones; Frank Norris Knapp; John Nickolas Libert; Elmer Harry Lutz; Archibald MacLaren; Jos. Louis Martineau; Edward August Meyerding; Joseph Clement Michael; Nels. George Mortensen.

Justus Ohage Jr.; William Patrick O'Malley; John Jay Platt; Fred John Plondke; Louis Ramalay; Willmar C. Rutherford; Francis Savage; Edward Schons; Olaf I. Sohlberg; John Clarence Staley; Kenneth Taylor; William Henry Von der Weyer; Jonas Samuel White; Frank White Whitmore; Clayton K. Williams; *Otto* Louis Winter; Harry Bernard Zimmerman; Johan Martin Arnson; Bernard John Weigel.

Red Lake County

RED LAKE FALLS—John Clinton Wilkinson.

Red Wood County

SANBORN—Monte Charles Piper.
REDWOOD FALLS—Herman Oscar McPheeters.

Renville County

FAIRFAX—Arthur Murphy Crandall. HECTOR—Harry E. McKibben. RENVILLE—Ivan Rudolph Maercklein.

Rice County

FARIBAULT—Charles W. Robilliard; Frank Storms Warren. NORTHFIELD—Fager M. Babcock; Joseph Moses Jr.

Rock County

HILLS—Frederick Alonzo Engstrom.

Scott County

JORDAN—Lawrence Joseph Leonard; William Henry Phillips. SHAKOPEE—George Peter Dempsey.

Sherburne County

CLEAR LAKE—Harry Brooks Clark.

Sibley County

HENDERSON—John Felix Traxler.

St. Louis County

AURORA—Robert Percy Pearsall. BIWABIK—Paul Stevenson Epperson. CHISHOLM—Charles Hyatte Cherry. DULUTH—Chester Harland Clark; Joseph Henry Cosgrove; William Joakim Eklund; Frank Augustus Grawn; Fredolph H. Magney; William Joseph McKillip; Fred J. Patton; C. E. Prudden; Campbell Sansing. EVELETH—Harvey Francis Rawlings; John Andrew Saari. GILBERT—Frederick Barrett. VIRGINIA—Holland Todd Ground. WEST DULUTH—Robert Sabin Forbes.
DULUTH—Simon Aloysius Walkowiak.

Stearns County

ALBANY—Delphin William Kohler. BELGRADE—Hugh Henry Slocumb. BROOTEN—Richard T. Glyer. KIMBALL—Frank P. Frisch; Richard O. Leavenworth. PAYNESVILLE—Harry William Arndt; Pierre Celestin Pilon. SAUK CENTER—Harold Ladd Lamb. ST. CLOUD—George Delos Rice; Phillip E. Stangl.

Steele County

BLOOMING PRAIRIE—William John Dailey; Albert Miller Treat.

Stevens County

HANCOCK—Mathias Lent Ransom. MORRIS—Edward Thomas Fitzgerald.

Swift County

BENSON—Lloyd Hermanus Van Slyke.

Traverse County

BROWN VALLEY—Ronald Leitch Laney. TINTAH—Nathan Freeman Doleman. WHEATON—Bret Verne Bates.

Wabasha County

ELGIN—Walter Franklin Bleifuss. MAZEPPA—William Brown Heagerty. WABASHA—David Simon Fleischauer.

Wadena County

WADENA—Paul E. Kenyon.

Waseca County

WASECO—William Frederick Passer.

Washington County

STILLWATER—Eugene Benson Stebbins.

Watonwan County

LEWISVILLE—Robert I. Barickman.

Wilkin County

BRECKENRIDGE—Ernest Wesley Rimer. CAMPBELL—William Edgar Wray.

Winona County

LEWISTON—Gilbert Hendrickson. WINONA—William Vardeman Lindsay; Bertolet Perry Rosenberry; Samuel Schaefer.
WINONA—George Vincent Lynch; Charles Pern Robbins.

Wright County

ANNANDALE—George Henry Norris. BUFFALO—John Jefferson Catlin. DELANO—Bert Victor Lares. MONTICELLO—Frank Everette Ellison.

Yellow Medicine County.

GRANITE FALLS—Maurice Levy.

MISSISSIPPI STATE MEDICAL ASSOCIATION

Officers 1917-18

Willis Walley, President	
O. W. Pigford, Vice President	Jackson
H. A. Gamble, Vice President	Meridian
O. N. Arrington, Vice President	Greenville
E. F. Howard, Secretary	Brookhaven
T. M. Dye, Acting Secretary	Vicksburg
J. M. Buchanan, Treasurer	Clarksdale
	Meridian

Council Districts and Officers

First District.—Tunica, Coahoma, Quitman, Tallahatchie, Leflore, Sunflower, Bolivar and Washington counties. L. L. Minor, Councilor, Hollywood.

Second District.—De Soto, Tate, Panola, Yalobusha, Grenada, Lafayette, Marshall and Calhoun counties. B. L. Guyton, Councilor, Oxford.

Third District.—Benton, Tippah, Alcorn, Tishomingo, Prentiss, Lee, Union, Pontotoc and Itawamba counties. C. M. Murry, Councilor, Ripley.

Fourth District—Chickasaw, Monroe, Clay, Lowndes, Oktibbeha and Choctaw counties. F. J. Underwood, Councilor, Nettleton.

Fifth District.—Carroll, Montgomery, Attala, Madison, Holmes, Webster and Yazoo counties. T. J. Hooper, Councilor, Kosciusko.

Sixth District.—Issaquena, Sharkey, Warren, Claiborne, Hinds and Rankin counties. S. W. Johnston, Councilor, Vicksburg.

Seventh District.—Noxubee, Winston, Leake, Scott, Neshoba, Kemper, Lauderdale and Newton counties. W. G. Gill, Councilor, Newton.

Eighth District.—Lawrence, Simpson, Covington, Smith, Jones, Jasper, Wayne and Clarke counties. H. F. Garrison, Councilor, Seminary.

Ninth District.—Amite, Adams, Copiah, Franklin, Jefferson, Lincoln, Pike and Wilkinson counties. J. C. McNar, Councilor, Fayette.

Tenth District.—Greene, Hancock, Harrison, Jackson, Marion, Perry and Pearl River counties. S. E. Reese, Councilor, Purvis.

MISSISSIPPI

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., e.c.
Adams	426	17.7	25,265	1,053	24	..	17	22	11	8
Alcorn	386	18.4	20,471	974	21	..	12	19	13	3
Amite	714	39.7	24,592	1,366	18	..	8	15	5	2
Attala	715	32.5	30,751	1,397	22	..	15	16	10	..
Benton	396	49.5	10,245	1,280	8	1	4	8	3	1
Bolivar	879	14.4	58,744	963	61	..	43	51	40	5
Calhoun	579	24.1	18,613	775	24	..	17	21	11	3
Carroll	624	28.4	23,886	1,085	22	..	14	15	10	3
Chickasaw	501	20.0	25,002	1,000	25	..	18	18	11	3
Choctaw	414	29.6	15,322	1,094	14	1	7	9	5	..
Claiborne	489	40.7	17,403	1,450	12	..	5	7	5	..
Clarke	675	33.7	24,469	1,223	20	..	10	12	8	3
Clay	408	25.5	20,671	1,291	16	..	11	14	9	1
Coahoma	530	10.6	40,000	800	50	1	38	39	38	3
Copiah	769	24.0	37,023	1,156	32	..	14	21	11	2
Covington	410	22.8	21,135	1,174	18	..	12	13	12	2
De Soto	475	18.3	23,130	889	26	..	12	13	16	2
Forrest	462	12.5	28,031	758	37	2	17	30	17	6
Franklin	547	32.2	16,298	958	17	..	11	14	2	2
George	475	59.4	7,420	927	8	..	4	8	7	..
Greene	710	142.0	6,803	1,360	5	..	3	3	2	..
Grenada	442	23.3	16,906	889	19	..	10	12	10	4
Hancock	329	23.5	11,207	800	14	1	11	13	8	3
Harrison	1,013	19.9	37,096	727	51	2	26	38	29	9
¹Hinds	858	9.6	71,865	807	89	..	50	67	50	14
Holmes	831	19.8	40,738	969	42	1	23	33	18	6
Issaquena	406	81.2	10,676	2,135	5	..	1	1	3	..
Itawamba	529	31.1	15,243	896	17	..	10	13	3	3
Jackson	710	47.3	17,374	1,158	15	..	5	10	14	1
Jasper	447	20.3	20,762	943	22	..	14	15	8	2
Jefferson	507	63.4	18,221	2,277	8	1	9	7	6	1
Jefferson Davis	404	31.1	16,074	1,236	13	..	7	10	11	1
Jones	696	19.3	38,673	1,074	36	..	26	28	12	9
Kemper	752	35.8	20,348	968	21	..	15	16	9	..
Lafayette	641	26.7	21,883	911	24	..	11	18	13	..
²Lake	...	....	......	...	..	..	..	..	..	..
Lamar	495	3.0	15,748	97	16	2	13	16	8	1
Lauderdale	700	9.6	53,321	730	73	1	42	60	46	16
Lawrence	418	23.2	16,349	908	18	..	12	15	10	3
Leake	576	26.2	18,984	862	22	..	12	16	3	2
Lee	448	10.9	33,958	828	41	..	30	29	26	3
Leflore	572	11.7	45,381	926	49	..	30	41	21	8
Lincoln	578	27.5	33,739	1,606	21	..	14	17	11	3
Lowndes	499	15.1	31,877	965	33	..	16	25	11	7
Madison	725	38.1	34,243	1,802	19	..	11	14	7	3
Marion	624	34.7	15,922	884	18	..	13	14	5	..
Marshall	689	29.9	26,796	1,165	23	..	12	17	9	2
Monroe	770	24.1	38,070	1,189	32	..	19	26	17	7
Montgomery	398	19.9	18,559	927	20	..	13	15	15	8
Neshoba	561	29.5	21,816	1,558	19	1	14	17	10	2
Newton	568	21.0	25,551	946	27	..	15	19	15	4
Noxubee	682	52.5	28,503	2,192	13	..	7	8	4	1
Oktibeha	457	24.0	19,676	1,035	19	..	14	15	8	2
Panola	696	22.4	32,912	1,061	31	1	12	16	13	1
Pearl River	797	53.1	14,208	947	15	..	12	15	3	..
Perry	641	53.6	10,395	866	12	..	12	12	6	5
Pike	707	19.1	29,372	793	37	..	25	26	19	5
Pontotoc	494	18.3	20,719	767	27	..	11	15	7	1
Prentiss	409	17.0	17,765	740	24	..	15	15	14	1
Quitman	395	23.2	16,087	946	17	..	13	15	10	1
Rankin	791	41.6	26,124	1,374	19	..	13	15	8	1
Scott	597	37.3	18,479	1,154	16	..	10	10	9	1
Sharkey	444	24.7	18,479	1,027	18	..	9	12	7	..
Simpson	575	21.3	20,413	755	27	..	20	17	14	2
Smith	616	36.2	19,191	1,128	17	..	8	13	9	..
Stone	475	36.5	7,531	579	13	..	9	11	4	..
Sunflower	690	13.0	38,058	718	53	..	35	46	25	8
Tallahatchie	629	17.5	35,996	999	36	..	24	29	17	6
Tate	400	20.0	19,714	985	20	..	15	16	11	1
Tippah	446	24.4	15,834	879	18	..	4	10	4	1
Tishomingo	428	22.5	15,215	800	19	..	9	14	5	2
Tunica	418	23.2	20,227	1,123	18	..	9	15	10	..
Union	412	21.7	20,803	1,094	19	..	12	13	9	5
³Walthall	...	....	20,000	3,333	6	..	5	5	2	..
Warren	572	65.5	37,488	986	38	..	27	28	20	9
Washington	877	15.4	48,933	858	57	..	35	42	28	9
Wayne	812	74.1	16,292	1,086	15	..	8	9	6	1
Webster	416	24.5	15,753	926	17	..	10	11	2	1
Wilkinson	667	95.3	18,075	2,582	7	..	5	6	4	1
Winston	597	22.1	19,388	718	27	..	19	25	11	4
Yalobusha	490	23.3	22,817	1,086	21	..	15	17	13	4
Yazoo	1,038	24.7	48,660	1,158	42	..	23	33	19	6
Totals	46,825	23.7	1,994,685	1,009	1,975	15	1,231	1,527	985	260

1. Includes Jackson, population 31,104; physicians 57 [M.R.C. 13].
2. County recently organized; area and population included with that of other counties.
3. County recently organized; area included with that of other counties.

HONOR ROLL

Adams County

NATCHEZ—Edwin Eugene Benoist; Charles T. E. Chamberlain; John W. D. Dicks; Alfred Lawson Lewis; James Alexander Owen; Augustine Joseph Podesta; John Lilly Trice; Jacob Southeimer Ullman.

Alcorn County

CORINTH—Guy A. Caldwell; Maury Holcombe McRae. RIENZI—Milton Waldrop Robertson.

Amite County

GLOSTER—Harvey Thomas Cuming; Frank Calhoun Smith.

Benton County

MICHIGAN CITY—Emile Quorles Withers.

Bolivar County

ALLIGATOR—Samuel Tilden Wells. CLEVELAND—Arthur Alphonso Sparkman. GUNNISON—John Douglas Simmons. SCOTT—Swinton Lamar Lane. SHAW—John Eldon McDill.

Calhoun County

BANNER—William Thomas Watson. *REID—Rufus* Elmber Priest. VARDAMAN—William J. Aycock.

Carroll County

BLACK HAWK—Graham Wall Diggs. NORTH CARROLTON—Hardie Rogers Hays. VAIDEN—Cassius D. Alexander.

Chickasaw County

HOUSTON—Daniel Sidney Johnson Jr.; Embry Pryor Wilson. OKOLONA—Armond French Wicks.

Clarke County

ENTERPRISE—Joseph Turner Irby. QUITMAN—Benjamin Jefferson Mchae. SHUBUTA—James Andrew McDevitt.

Clay County

WEST POINT—Lon W. Dotson.

Coahoma County

CLARKSDALE—Thomas Joor Bush. FRIAR POINT—James Aylmer Stack. *LULA—Eugene Reginald Shurley.*

Copiah County

ROCKPORT—Hugh Long McCalip. WESSON—Carlos Reese McKee.

Covington County

MOUNT OLIVE—John Suine McIntosh. SANFORD—Harry Greenweil Fridge.

De Soto County

COCKRUM—Dudley Rook Moore.
OLIVE BRANCH—Ellis Leroy Wilkins.

Forrest County

HATTIESBURG—*William Roland* Bethea; Walter W. Crawford; Robert Myers Donald; Duncan McInnis Draughn; Hampden Sidney Lewis.
PETAL—Fletcher Eugene Lee.

Franklin County

ROXIE—John Harrison Wood. LUCIEN—Albert Columbus Lofton.

Grenada County

GRENADA—Paul Zollicoffer Browne; Frank Small Hill. HARDY STATION—Filo B. Coats. HOLCOMB—Barton Jones Farr.

Hancock County

BAY ST. LOUIS—Benjamin Clarence Rush. KILN—William Wallace Allred.
LOGTOWN—Joseph Otto Legura.

Harrison County

BILOXI—James Clinton Ballard; Hewitt Johnston; Charles Allen McWilliams; Erskine Patrick Odeneal. BOND—Burl Samuel Hood. GULFPORT—Edward Clifton Parker. PASS CHRISTIAN—John Galbraith Pratt; Robert Alexander Strong. STILLMORE—Reginald Francis Annis.

Hinds County

FONDREN—Peyton R. Greaves.
JACKSON—*Malcolm Irvin* Brewer; Wallace Leslie Britt; Enoch Callaway; Walter Parker Dobson; Archie Ewing Gordin; Thomas Michael Kane Jr.; William B. Lewis; Little Berry Neal; Robert Lee Peyton; Wirt *Adams Rodgers*; Nolan Stewart; Charles Emmett Walker; James Percy Wall.

Holmes County

CRUGER—Robert Sidney Love.
DURANT—Roy Charles Elmore. GOODMAN—Sidney Colton Williams.
LEXINGTON—Sidney Love; William Homer Strahan; Robert Mills Stephenson. WEST—John William Green.

Itawamba County

EASTMAN—Allison Tower Graham. RARA AVIS—Edgar Allen Patton.
RATLIFF—Ellis Perre *Burns.*

Jackson County

OCEAN SPRINGS—Henry Bradford Powell.

Jasper County

MOSS POINT—Henry McCabe Burnham. VOSBURG—Dryden Lamar Walker.

Jefferson County

McBRIDE—Robert Blackburn Harper.

Jefferson Davis County

CARSON—Virgil Newton Nichols.

Jones County

LAUREL—Harvey Lee Brown; Charles C. Buchanan; Frederick Marshall Cook; John Robert Kittrell; David Rodgers; John Franklin Scarborough. MOSELLE—John C. Butler. SOSO—Ellison Holmes Williamson.

Kemper County

DE KALB—John Stennis Adams.

Lamar County

SUMRALL—Albert Coleman Bryan.

Lauderdale County

MERIDIAN—Herbert L. Arnold; Thomas Grover Cleveland; Inman Williams Cooper Jr.; Gilbert Franklin Douglas; Marcelus Craig Garner; W. R. Grady; Leonard Hart; Ossce Fulton Keen; Kutcheu Threefoot Klein; Robert Matthews Leigh; Robert B. Mathews; Thomas Jefferson Smith; Thomas Alva Stra[illegible]n; John Robert Tackett. WHYNOT—Thomas Edward Phillips.
MERIDIAN—James McElroy Guthrie.

Lawrence County

OAKVALE—Grover Cleveland Denson; *Phil Russell Polk.* SILV CREEK—John Williams Wilson.

Leake County

CARTHAGE—Abner Jones Barnett; James Lovelace Parkes.

Lee County

BETHAN—*Henry Griffin* Waldrop.
SHANNON—Shelby Cruthirds Spencer. TUPELO—Roy Nathon C ruth.

Leflore County

GREENWOOD—Leonidas F. Barrier; Mark Anthony Booth; Benja Temple Williamson. ITTA BENA—Harvey Linwood Shannon. MONE John William Brandon Jr.; *John H. McLain.* *SCHLATER—Martin Lut* Holland. SIDON—Riley Barber Yates.

Lincoln County

BROOKHAVEN—John H. Johnson; *Norman Algernon* McLeod; Ira L. Parsons.

Lowndes County

ARTESIA—Edward Lehmberg. COLUMBUS—James William Cox; John Edgar Davis; William Lindley Ervin; William F. Leigh; John Washington McClain; William *Evans* Richards.

Madison County

CAMDEN—John Whitworth Melvin. CANTON—Charles G. Bell. FLORA—Oliver Rudolph Fore.

Marshall County

HUDSONVILLE—George Eddie Johnson. POTTS CAMP—Robert Hugh Pegram.

Monroe County

ABERDEEN—James Milton Acker Jr.; Richard M. Boyd; Leonard; Andrew Crosby. *GATTMAN—Forney Know Hollis.* HAMILTON—Lewis Wheeler Darracott. MULDON—James Estelle Dunlap. SMITHVILLE—Victor Hugo Bean.

Montgomery County

DUCK HILL—Samuel S. Caruthers. *KILMICHAEL*—Henry Gooch Hammond. SWEATMAN—Frank Lynn McGahey. WINONA—John Woodson Barksdale; George Baskerville; Thomas Wilburn Holmes; William Jefferson Lusk; Zachariah James Scott.

Neshoba County

PHILADELPHIA—Charles Henry Harrison; William Carl Seale.

Newton County

CHUNKY—Charles Augustus Martin. HICKORY—J. R. Plummer. NEWTON—Augustus Melville Harrelson. UNION—Zeffa Carl Hagen.

Noxubee County

SHUQUALAK—John Howard Kellis.

Oktibehha County

AGRICULTURAL COLLEGE—Benjamin Joseph Marshall. STARKVILE—Fred Lee Ricks.

Panola County

PLEASANT GROVE—James Freeman Williamson.

Perry County

AGNESS—*Frank Aquilla* Rogers. NEW AUGUSTA—Benjamin Travis Robinson. *RHODES—Iris Joe Slay.* *RICHTON—Edward Moody* Gavin; David W. Walley.

Pike County

MAGNOLIA—*Rufus E.* Applewhite. *McCOMB—Eugene Ray Gordon;* Bryant Jefferson Hewitt; Luther Boyce Otken. SUMMIT—Kotz Allen.

Pontotoc County

ALGOMA—Edward Greenland Abernethy.

Prentiss County

BOONEVILLE—Franklin Gail Riley.

Quitman County

LAMBERT—Eric Alexander McVey.

Rankin County

PUCKET—Solomon *Relophard Boykin.*

Scott County

LAKE—William Edwin Moody.

Simpson County

MAGEE—Ernest Leonard Posey. PINOLA—John Lively White.

Sunflower County

BALTZER—Claud Clinton G[illegible] Estus Farmer. DREW—Bernard Hess *Booth.* [illegible] les Kent; George Jefferson Mancill; Samuel Doa[illegible] —Lee Kelly Mayfield. RULEVILLE—Burris Earle Burchfield.

Tallahatchie County

CHARLESTON—Hugh White Priddy. PHILLIPP—George Randolph Storm. TIPPO—Walter Clarence Friday. TUTWILER—John Garner Backstrom. WEBB—John Aaron Harris; William Robin Harris.

Tate County

STRAYHORN—*Lewis Wesley* Kitchens.

Tippah County

RIPLEY—John Taylor Barbee.

Tishomingo County

PADEN—Carl Western Norwood.

Tunica County

DUNDEE—Hal Glenn Johnson.

Union County

BLUE SPRINGS—William C. Hays. NEW ALBANY—Clyde Madison Speck; Hugh *Priddy* Boswell; William Luther Newton.

Walthall County

KNOXO—Richard Baker Austen.

Warren County

VICKSBURG—Hugh C. Denson; Charles John Edwards; John Sharp Ewing; Ewing Fox Howard; Sydney William Johnston; Richard Thomas O'Neil; Fred Edward Pinson; Henry Franklin Sproles; Augustus Street.

Washington County

BELZONI—Edw. L. Robertson. ERWIN—Walter William Scott. FOOTE—Thompson F. Worthington. GREENVILLE—John George Archer; Paul Gaston Gamble. HOLLANDALE—George Howard Spivey. ISOLA—William George Byrd; William Cooke Lester. WAYSIDE—Franklin Howard Russell.

Wayne County

CLARA—George David Mason.

Webster County

EUPORA—J. Howard Brown.

Wilkinson County

FORT ADAMS—David George Lemkowitz.

Winston County

LOUISVILLE—Silas Wesley Pearson. NOXAPATER—Joseph Cone Robinson. PLATTSBURG—James Henry Slaughter; Samuel Houston Wood.

Yalobusha County

COFFEYVILLE—Roger Pou Hentz. WATER VALLEY—Hilton Rice Carr; Montie Porter; Jesse Davis Westmoreland.

Yazoo County

BENTONIA—Miller Craft Henry. LAMKIN—James Sims Reid. LOUISE—James Thomas Rainer. MIDNIGHT—William Adam DeWitt James. VAUGHAN—John Houston Steen. YAZOO CITY—George Cameron Jones.

MISSOURI STATE MEDICAL ASSOCIATION

Officers 1917-18

Robt. E. Schlueter, President	St. Louis
Vice Presidents—	
J. P. Henderson	Kansas City
H. A. Lowe	Springfield
Frank B. Long	Sedalia
W. A. Clark	Jefferson City
F. W. Colton	Van Buren
E. J. Goodwin, Secretary	St. Louis
Gail D. Allen, Treasurer	Lamar

Councilor Districts and Officers

A. R. McComas, Chairman, Sturgeon; E. J. Goodwin, Secretary, St. Louis.

First District.—Holt, Atchison and Nodaway counties. Eugene L. Crowson, Councilor, Pickering.

Second District.—Buchanan and Andrew counties. O. C. Gebhart, Councilor, St. Joseph.

Third District.—Harrison, Worth, Gentry and DeKalb counties. G. W. Whitely, Councilor, Albany.

Fourth District.—Grundy, Sullivan, Mercer and Putnam counties. J. B. Wright, Councilor, Trenton.

Fifth District.—Clark, Scotland and Schuyler counties. J. R. Bridges, Councilor, Kohoko.

Sixth District.—Adair, Knox and Lewis counties. P. F. Cole, Councilor, Ewing.

Seventh District.—Shelby, Marion and Ralls counties. Jacob D. Smith, Councilor, Shelbina.

Eighth District.—Lincoln, St. Charles, St. Louis and Pike counties. Leander W. Cape, Councilor, Maplewood.

Ninth District.—Audrain, Boone, Howard, Callaway, Warren and Montgomery counties. A. R. McComas, Councilor, Sturgeon.

Tenth District.—Macon, Randolph and Monroe counties. Don A. Barnhart, Councilor, Huntsville.

Eleventh District.—Chariton, Carroll, Livingston and Linn counties. G. W. Hawkins, Councilor, Salisbury.

Twelfth District.—Platt, Clay, Ray, Clinton, Caldwell and Daviess counties. Spence Redman, Councilor, Platte City.

Thirteenth District.—Jackson County. F. E. Murphy, Councilor, Kansas City.

Fourteenth District.—Lafayette, Saline and Cooper counties. C. T. Ryland, Councilor, Lexington.

Fifteenth District.—Cass and Johnson counties. H. S. Crawford, Councilor, Harrisonville.

Sixteenth District.—Bates, Vernon, Barton, Cedar and Dade counties. E. N. Chastain, Councilor, Butler.

Seventeenth District.—Pettis, Henry, Benton, St. Clair and Hickory counties. W. J. Ferguson, Councilor, Sedalia.

Eighteenth District.—Miller, Moniteau, Morgan and Camden counties. J. B. Norman, Councilor, Tipton.

Nineteenth District.—Cole, Osage, Maries and Gasconade counties. S. V. Bedford, Councilor, Jefferson City.

Twentieth District.—Franklin County and St. Louis City. A. H. Hamel, Councilor, St. Louis.

Twenty-First District.—Jefferson, Ste. Genevieve and Perry counties. G. M. Rutledge, Councilor, Ste. Genevieve.

Twenty-Second District.—Scott, Madison, Cape Girardeau, Mississippi and Bollinger counties. Garnett S. Cannon, Councilor, Fornfelt.

Twenty-Third District.—Dunkin, Pemiscot and New Madrid counties. J. H. Timberman, Councilor, Marston.

Twenty-Fourth District.—Wayne, Ripley, Butler, Carter, Shannon and Stoddard counties. Wm. [illegible] ar Bluff.

Twenty-Fifth District.—[illegible] n and St. Francis counties. O. A. Smith, [illegible]

Twenty-Sixth District.—[illegible], Laclede and Dent counties. W. H. Breuer, Councilor, St. James.

Twenty-Seventh District.—Howell, Ozark, Oregon, Texas, Wright and Douglas counties. H. C. Shuttee, Councilor, West Plains.

Twenty-Eighth District.—Dallas, Greene, Lawrence, Barry, Stone, Christian, Webster, Polk and Taney counties. T. O. Klinger, Councilor, Springfield.

Twenty-Ninth District.—McDonald, Newton and Jasper counties. R. L. Wills, Councilor, Neosho.

MISSOURI

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Adair	571	21.1	23.407	866	27	..	10	18	9	3
Andrew	428	21.4	15,282	764	20	..	10	14	8	..
Atchison	528	29.3	13,604	755	18	..	6	9	12	..
Audrain	685	22.1	22,069	711	31	..	12	23	25	1
Barry	784	26.1	23,869	795	30	1	6	19	16	2
Barton	596	28.4	16,747	797	21	1	6	11	12	2
Bates	870	24.2	25,869	718	36	..	16	24	26	8
Benton	745	41.4	14,881	830	18	..	9	13	15	2
Bollinger	609	40.6	14,576	971	15	..	9	13	5	1
Boone	688	10.7	31,911	498	64	2	23	44	35	6
[1]Buchanan	408	2.3	101,331	562	180	3	95	151	107	21
Butler	699	25.9	23,435	867	27	..	16	21	15	5
Caldwell	433	13.1	14,605	442	33	..	11	20	19	4
Callaway	808	20.2	24,400	610	40	..	14	28	23	4
Camden	687	52.8	11,582	890	13	..	6	10	6	..
Cape Girardeau	580	10.9	30,033	566	53	1	21	36	30	3
Carroll	703	27.0	23,098	888	26	1	9	12	19	3
Carter	506	63.2	5,501	688	8	..	1	5	4	..
Cass	721	19.0	22,973	604	38	..	17	32	31	5
Cedar	498	19.9	16,080	643	25	1	8	17	15	1
Chariton	768	27.4	23,503	839	28	..	10	20	21	1
Christian	553	32.5	15,832	931	17	..	7	10	10	3
Clark	498	23.7	12,811	610	21	..	4	12	13	1
Clay	402	7.6	21,323	402	53	..	21	39	36	4
Clinton	423	16.3	15,297	588	26	..	10	18	15	1
Cole	389	13.0	22,963	765	30	..	15	26	21	2
Cooper	558	19.9	20,311	725	28	..	13	13	19	1
Crawford	747	53.3	11,025	1,001	14	1	6	8	10	1
Dade	501	29.3	15,613	918	17	..	6	13	4	2
Dallas	543	38.8	13,181	941	14	..	4	7	3	..
Daviess	564	20.9	17,605	652	27	..	11	18	4	5
DeKalb	425	23.6	12,531	696	18	1	9	9	9	..
Dent	746	82.9	13,432	1,492	9	..	3	4	5	..
Douglas	804	73.1	16,661	1,514	11	..	4	6	5	..
Dunklin	530	10.4	36,621	718	51	..	23	40	24	9
Franklin	879	20.4	29,830	693	43	..	22	33	27	8
Gasconade	514	30.2	13,247	779	17	..	10	15	12	1
Gentry	490	17.1	16,820	600	28	1	13	17	14	2
[2]Greene	667	5.5	71,946	594	121	..	54	79	77	14
Grundy	433	14.4	16,744	558	30	4	17	19	20	3
Harrison	721	20.0	20,466	568	36	1	14	16	17	1
Henry	744	17.3	27,242	633	43	2	10	27	30	3
Hickory	407	45.2	8,741	971	9	..	4	4	6	..
Holt	446	15.4	14,539	501	29	..	13	19	22	1
Howard	468	19.5	15,653	668	24	..	7	15	23	3
Howell	915	35.2	21,065	810	26	1	6	16	8	1
Iron	553	46.1	8,563	713	12	..	4	9	6	3
[3]Jackson	610	0.6	347,997	363	958	41	491	621	385	154
[4]Jasper	635	4.8	94,099	697	135	5	51	98	68	8
Jefferson	681	25.2	29,458	1,091	27	..	11	19	13	1
Johnson	831	18.9	26,297	597	44	..	10	27	22	6
Knox	514	22.3	12,403	539	23	..	8	16	12	2
Laclede	733	37.6	17,976	898	20	..	5	14	10	..
Lafayette	612	13.0	30,154	641	47	1	23	32	34	3
Lawrence	609	15.2	26,583	664	40	1	16	34	25	3
Lewis	504	18.0	15,514	554	28	..	15	21	19	4
Lincoln	607	17.8	17,033	500	34	..	9	24	4	6
Linn	626	17.4	25,253	701	36	1	23	25	33	5
Livingston	531	17.1	19,453	627	31	..	9	21	19	2
McDonald	527	37.6	13,539	967	14	..	2	6	4	2
Macon	809	17.6	30,868	671	46	..	15	29	31	5
Madison	499	38.4	12,218	939	13	..	7	8	10	..
Maries	520	43.3	10,432	869	12	..	6	9	8	3
Marion	436	8.1	33,666	623	54	1	26	39	23	6
Mercer	453	23.8	12,335	649	19	..	10	16	13	5
Miller	593	37.1	17,833	1,114	16	..	7	13	10	3
Mississippi	413	17.9	16,540	719	23	..	11	16	13	2
Moniteau	410	24.1	14,375	845	17	..	7	11	16	2
Monroe	666	28.9	18,304	795	23	..	12	18	12	3
Montgomery	514	20.6	15,604	624	25	..	8	18	13	4
Morgan	614	38.4	13,365	835	16	..	8	13	6	2
New Madrid	653	24.1	25,478	943	27	..	17	24	12	3
Newton	622	22.2	27,234	972	28	1	7	18	17	..
Nodaway	871	16.4	28,833	514	53	..	19	34	32	5
Oregon	778	70.7	15,245	1,385	11	..	4	7	1	..
Osage	593	14.8	14,420	360	40	..	12	20	15	3
Ozark	746	82.8	11,926	1,325	9	..	4	5	3	..
Pemiscot	456	14.7	24,992	806	31	..	19	25	19	3
Perry	462	24.3	14,898	784	19	..	11	16	8	3
Pettis	685	12.2	34,988	624	56	1	28	47	37	9
Phelps	670	41.9	16,964	1,060	16	1	6	11	11	2
Pike	653	22.5	22,556	777	29	1	14	23	9	7
Platte	415	18.9	14,429	655	22	..	6	16	16	4
Polk	641	22.1	21,561	743	29	..	15	16	22	2
Pulaski	542	30.1	12,199	677	18	..	9	9	12	2
Putnam	517	30.4	14,308	841	17	2	8	11	10	1
Ralls	418	20.9	13,368	668	20	..	5	9	5	1
Randolph	491	8.9	27,451	499	55	..	17	39	24	8
Ray	565	21.0	21.451	794	27	..	10	18	16	1
Reynolds	828	92.0	10,637	1,181	9	..	6	7	9	1
Ripley	627	78.4	1,399	174	8	..	3	5	3	2
St. Charles	535	15.3	24,854	710	35	..	15	29	15	8
St. Clair	706	28.6	16,412	683	24	1	7	15	16	3
Ste. Genevieve	481	43.7	10,787	980	11	..	5	8	9	2
St. Francois	458	11.2	44,267	1,079	41	..	16	33	25	5
St. Louis City	61	0.03	768,630	444	1,730	75	1,070	1,412	832	304
St. Louis	487	2.0	106,049	460	239	3	42	62	44	9
Saline	754	12.8	29,448	499	59	..	23	36	30	3
Schuyler	309	19.3	9,062	566	16	..	6	9	10	1
Scotland	439	24.4	11,869	659	18	..	7	11	11	2

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1. Includes St. Joseph, population 86,498; physicians 166 [M.R.C. 17].
2. Includes Springfield, population 41,169; physicians 111 [M.R.C. 13].
3. Includes Kansas City, population 305,816; physicians 903 [M.R.C. 152].
4. Includes Joplin, population 33,400; physicians 69 [M.R.C. 4].

MISSOURI—Continued

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Scott..........	419	10.7	29,145	747	39	..	20	36	18	5
Shannon........	992	124.0	11,585	1,448	8	..	4	5	2	1
Shelby.........	509	18.2	14,864	530	28	..	11	19	21	6
Stoddard.......	815	22.6	30,097	836	36	..	23	35	8	7
Stone..........	510	63.7	12,775	1,596	8	..	5	6	6	..
Sullivan.......	649	21.6	18,598	619	30	..	8	13	12	1
Taney..........	655	93.5	9,134	1,304	7	..	2	5	3	1
Texas..........	1,159	52.7	21,458	975	22	..	9	16	17	4
Vernon.........	839	20.5	28,827	703	41	..	12	25	31	2
Warren.........	410	37.3	9,123	829	11	..	3	8	4	..
Washington....	741	61.7	13,378	1,114	12	..	6	7	1	..
Wayne..........	775	36.9	15,181	722	21	..	9	14	7	2
Webster........	585	34.4	17,914	1,053	17	..	6	8	13	1
Worth..........	265	18.9	8,007	571	14	..	10	12	2	2
Wright.........	677	30.8	18,895	858	22	..	8	10	12	1
Totals........	68,664	11.3	3,537,819	583	6,063	156	2,956	4,375	3,136	699

HONOR ROLL

Adair County

KIRKSVILLE—Frank Lester Bigsby; Ezra Clarence Grim; Wilford Wayne Martin.

Audrain County

VANDALIA—Warren Wilson Bland.

Barry County

CASSVILLE—William Thomas Jefferson Bailey. SHELL KNOB—Lossie Edward Gilbert.

Barton County

IANTHA—George Everett Locker. LAMAR—Gall Darwin Allee.

Bates County

[illegible] Everette Robinson. [illegible] E. Crabtree; Charles A[illegible] HILL—Herbert Wellingto[illegible] ROCKVILLE—Charles Elleretthe Powers.

Benton County

COLE CAMP—Norman Anthony Schwald. WARSAW—James Alexander Logan.

Bollinger County

PATTON—Henry Thomas O'Kelley.

Boone County

ASHLAND—Finis Clifford Suggett. COLUMBIA—William Patton Dysart; Otis Andrew Moore; Mazyck P. Havenel; Carl Miller Sneed. ROCHEPORT—Paul Shaeffer Mabry.

Buchanan County

DE KALB—William Judson Shelton. RUSHVILLE—Edgar Lee Gardner; Clay Spencer. ST. JOSEPH—Elijah Augustus Colley; Emmett F. Cook; William Tecumseh Elam; Oliver C. Gebhart; Fenton Noah Goodson; Charles Greenberg; Eugene Hall; Francis Xavier Hartigan; Pierre Isidore Leonard; Levi Samuel Long; Thomas J. Lynch; Frank Rudd McDonald; Otto A. Schmid; Albert Sidney Johnston Smith; Harry Leroy Smith; Estil Young Strawn; Hilen Ketcham Wallace; Henry Otto Witten.

Butler County

BROSELY—Walter Lee Brandon. POPLAR BLUFF—Victor Cadwell; Louis Bernard Knecht; Gough Henry Tarr. QULIN—Scott Cook.

Caldwell County

BRECENRIDGE—William Lent Chaffin. HAMILTON—Herbert Booth; Leander Jacob Eads. POLO—Isaac Newton Parrish.

Callaway County

BACHELOR—Halbert Rowland Hill. FULTON—Robert Goff Hall; Greene Day McCall; Elbert Lafayette Spence.

Cape Girardeau County

CAPE GIRARDEAU—John W. Berry; Paul Raymond Williams. FRUITLAND—Chester Arthur Poe.

Carroll County

CARROLLTON—Harold Blaine Scovern. DEWITT—Bid Cooper Cole; Marcus Rolla Damron.

Cass County

CREIGHTON—E[illegible] HARRISONVILLE—Harry Struthers Crawfor[illegible] Andrew Fair; Rowland Paxton Yeagle. [illegible] Chaffin.

Cedar County

STOCKTON—Burr Hamilton Emerson.

Chariton County

SALISBURY—Ora Francis McKittrick.

Christian County

BILLINGS—Frederick H. Brown. CLEVER—Floyd Herman Maples; Larkin E. Williams.

Clark County

LURAY—Virgil S. Dangerfield.

Clay County

EXCELSIOR SPRINGS—Thomas Andrew Grace. LIBERTY—Burton Maltby. NORTH KANSAS CITY—George Ross Dagg.

Clinton County

LATHROP—Otto Ernest Schoenfeld.

Cole County

JEFFERSON CITY—Lawrence David Enloe; Isaac Edward Moore.

Cooper County

BOONVILLE—Charles Forrest Lyle.

Crawford County

CUBA—John Herbert Martyn.

Dade County

GREENFIELD—Jerome Lee Rawhauser. LOCKWOOD—William Mathias Hoel.

Daviess County

GALLATIN—Earl Weldon Netherton; Marshall Ashby Smith. PATTONSBURG—Frank Hedges; John Wesley Nigh. WINSTON—Charles Clinton Coats.

Dunklin County

CARDWELL[illegible] Allen Grey Scott. CLARKTON—John Ray Limbaugh. KENNETT—Thomas [illegible]ison; James Clyde McKay; Ural Albert Beall.

Franklin County

BERGER—Robert Roscoe Cutler. ST. CLAIR—Reuben Hamilton Williams. SULLIVAN—Charles Hermann Eyermann; Otto Nicholas Schudde. WASHINGTON—Henry Allen May; Otto Lewis Muench; Henry L. Rothman. UNION—Floyd Blythe Ricketts.

Gasconade County

MORRISON—Isaac G. Cook.

Gentry County

KING CITY—Moses J. Ferguson; Alfred Morton Ganaway.

Greene County

SPRINGFIELD—Jasper L. Atherton; Ernest M. Box; William Andrew Dalzell; James E. Dewey; Ersel Mial Fessenden; Robert R. Glynn; Joseph Wooding Love; Horace Arch Lowe; James Madison Potts; William Frederic Andrew George Rienhoff; Murray Chaffee Stone; William J. Wills; Charles Elbert Woody. STRAFFORD—George Dillard Wells.

Grundy County

TRENTON—George W. Belshe; Walter Ernest West. BETHANY—Glen H. Broyles.

Harrison County

MARTINSVILLE—Alfred Louis Wessling.

Henry County

CLINTON—Samuel William Woltzen.

Hoddard County

BLOOMFIELD—Hugh Vincent Ashley.

Holt County

OREGON—Samuel E. Simpson.

Howard County

FAYETTE—Thomas Carter Richards; Merrill Neville Smith. GLASCOW—Wesley Romeo Hawkins.

Howell County

WEST PLAINS—A. H. Thornburgh.

Iron County

BELLEVIEW—Dailey Appleberry. GOODWATER—Herman Ramming. REDMONDVILLE—James Hardy Marten.

Jackson County

INDEPENDENCE—Francis Ignatius Stuart. KANSAS CITY—Christo Andrew Abramopoulos; Arthur N. Altringer; Paul V. Annadown; John Aull; George Elihu Bellows; Elmer J. Billick; John Fairbairn Binne; Theodore S. Blakesley; Harvey Peter Boughnou; Lloyd Reuben Boutwell; Roger B. Brewster; Arthur C. F. Brown; Bruce Hardy Brown; John Edgar Castles; Ernest W. Cavaness; Edward Harry Clark; Morris Holden Clark; Logan Clendening; Evan Shelby Connell; Calvin L. Cooper; George Francis Cooper; Paul F. Cope; William Forrest Culbertson.

Oram Columbus Dail; Fred Edward Dargatz; Charles Fletcher Davis; Charles Clayton Dennie; Everett R. DeWeese; Joseph Edgar Dibble; Frank Drake Dickson; Rex Leon Diveley; Harry William Dugay; Clarence E. Earnest; Devilla David Edmonds; James Ryan Elliott; Carl A. Feige; Amos Theodore Fisher; Albert Florian; Forest Field Foster; Clarence Benjamin Francisco; Claude Eugene Frazier; John Henry George; Joseph Getelson; Maurice Edward Grier.

John W. Hallberg; Minford Armour Hanna; Edmund Lee Harrison; Dillon Benjamin Haworth; John G. Hayden; Mayro Oran Hodge; George Washington Hedgepeth; Harold Bertram Hedrick; James Paris Henderson; Henry Lewis Hess; Sherman Blaine Hibbard; William Hickman Hill; Frank Baker Hiller; Samuel Barth Hirschberg; William Louis Hoagland; Arthur A. Hobbs; Russell Lorne Hodge; Ralph W. Holbrook; Walter Franz Holbrook; Charles Babson Hopkins; Joseph Aschwanden Horigan; John F. Howell; George Howard Hoxie; Claude Judson Hunt; Frank Hurwitt.

William Reginald Jackson; Archie N. Johnson; Granvil Lessen Kerley; Joseph Wesley Kimberlin; Paul Morton Krall; Owen William Krueger; Harold Philipp Kuhn; Thomas Arthur Kyner; Harper Miles LaRue; Arthur Charles Leonard; Ward Holmes Leonard; Ned Overton Lewis; Frederick McK. Lowe; Arthur Lee Ludwick; John Charles Lynch; John V. Lynn; Ernest Gutheric Mark; William Linn McBride; Harvey Edward McCarthy; George D. Carty; Clarence A. McGuire; Owen Percy McPherson; Reginald H. Meade; Robert Middlebrook; George Caplice Miller; Wade Hampton Miller; Lindsay S. Milne; James Gordon Montgomery; George Hulett Moreland; Lincoln Harrison Norwood; Joseph Francis Nutz.

James Whitman Ousley; Samuel Henry Clay Owen; Michael J. Owens; Charles Ralph Ozias; George B. Pipken; Jesse Thomas Pittam; Frank McCluny Postlewaite; James William Powers; Fabian Lee Pratt; Richard Bert Platt; Stephen Hood Ragan; Albert Thomas Ransone Jr.; George Wesley Rice; Francis I. Ridge; Samuel Earl Roberts; George Wilse Robertson; Fordyce Barker Rogers; Cameron Alfred Rose.

Ben Abraham Salzberg; James Robert Sanford; Edwin Henry Schorer; Franklin Frazier Sharon; Edward H. Skinner; Ernest W. Slusher; Walter Lee Small; Clinton Kitt Smith; Delbert O. Smith; James Herbert Smith; Samuel Harrison Snider; E. Stanton Stofer; John Theodore Swanson; Newman Marion Sykes; Frank Randall Teachenor; Guy Austin

Tull; Herbert Spencer Valentine; Dean Stanislau Van Hecke; William Chester Vernon; James C. Walker; John M. Walker; Leo H. Wallendorf; John Sebastian Weaver; Edwin C. White; John Henry Whittaker; Dorris E. Wilhelm; James Rector Williams; Charles Edgar Wilson; Paul Vincent Woolley. LEES SUMMIT—Lee Roy Farmer. OAK GROVE—James Lic [illegible]

[illegible] y Edgar Braun.

[illegible] *[illegible] oldman; George W. Smith.*

Jasper County

[illegible] ush McAllaster; Winfred Bryant Post. JOP- [illegible] Harry A. Leaming; Ellsworth E. Moody; [illegible] CITY—William George Hogan. LEEDS— [illegible]

Jefferson County

DE SOTO—Charles Earl Fallet.

Johnson County

HOLDEN—Samuel Astley Murray. LEETON—Elijay Y. Pare. WARRENSBURG—Alfred Wesley Harrison; Harry Field Parker; John Alexander Powers.

HOLDEN—Charles Emanuel Briscoe.

Knox County

EDINA—Henry Joseph Jurgens. KNOX CITY—Ralph McReynolds.

Lafayette County

CORDER—Lewis E. Carthrae Jr. ODESSA—Paul Baker Clayton; Roy Fallas Mills.

Lawrence County

MT. VERNON—William Ira Fulton; Frederick W. Shaw. PIERCE CITY—Fred Gasser.

Lewis County

CANTON—Alexander C. Crank; Ray Mercer. LA BELLE—Roy Edward Wilson. STEFFENVILLE—Samuel Winn Holt.

Lincoln County

HAWK POINT—John Joseph Devereaux. MOSCOW MILLS—Ray Howard Parker; Horace Albert Shepard. OLD MONROE—Percy Carl Neunlist. TROY—Samuel D. Avery. WINFIELD—John Frank Hardesty.

Linn County

BROOKFIELD—Luther John Ferguson; Roy Robert Haley; Charles Edwin Jenkins. MARCELINE—Edward August Hoefer. MEADVILLE—Morgan Leland Clint.

Livingston County

CHILLICOTHE—Calvin Lee Woolsey.

Macon County

BEVIER—George Franklin Brewington. ETHEL—Ned Alvin Balding. KEOTA—Franklin Thomas Edwards. MACON—Luther Ore Nickell; Edward Sanborn Smith.

Maries County

VANCLEVE—George Alfred Nieweg. VICHY—Joseph Thomas Brennan; Ralph E. Jones.

Marion County

HANNIBAL—James Franklin Cooper; Joel Wise Hardesty; William Turner Patterson; Frederick Bascom Spencer; Elmer Eugene Waldo. PALMYRA—Archibald Redd Stone.

McDonald County

ROCKY COMFORT—David Nathaniel Dabbs. SOUTH WEST CITY—John Pierce Beeson.

Mercer County

PRINCETON—Clarence J. Laws; Clay Eli Mullinax; John Morris Perry. RAVANNA—Fred Cottier Callaway. SALINE—Thomas John Wilkin.

Miller County

BRUMLEY—Preston Thompson. OLEAN—Lansford Monroe Spalding. ST. ELIZABETH—Lawrence Edward Gausepehl.

Mississippi County

CHARLESTON—John Calhoun Boone; Mitchell Hudson Shelby.

Moniteau County

JAMESTOWN—Cyrus P. McRaven; Logan Lancaster Latham.

Monroe County

HOLLIDAY—Wilford Henry Urquhart. MONROE CITY—John Albert Malley. STOUTSVILLE—John Michael Wilson.

Montgomery County

MIDDLETOWN — Winfield Newton Floyd. MINNEOLA—Douglas Wyatt. MONTGOMERY CITY—Carl Bibb Hudson; Buell Fountain Menefee.

Morgan County

BARNETT—James Frederick Leslie. VERSAILLES—Harry Nelson Lutman.

New Madrid County

LILBOURN—Edward Bogard. MARSTON—Claude McRaven; John Harrison Timberman.

Nodaway County

CLEARMONT—Horace Simpson Dowell. MARYVILLE—Leslie Errol Dean; Hugh Smith Rowlett; William Miles Wallis Jr. SKIDMORE—James Everett Pierpont.

Osage County

BONNOTS MILLS—Ezra Leslie Meads. CHAMOIS—Hans Schaerrer. META—Samuel Everett Gaston.

Pemiscot County

CARUTHERSVILLE—George W. Phipps; Ira Leon Scurlock. PASCOLA—James Knox Rosson.

Perry County

CROSSTOWN—Kirby Curtis Garner. LITHIUM—John Harvey Graff. PERRYVILLE—Francis Meredith Vessells.

Pettis County

GREEN RIDGE—Eugene Albert Heibner. LA MONTE—Ernest Mitchell. SEDALIA—William Albert Beckemeyer; Gulph Walden Grove; Charles Richard Long; Frank Barnes Long; Hardy David Havard; Clive Sidney McGinnis; Henry Albert Meyers.

Phelps County

ROLLA—Stuart Lee Baysinger. ST. JAMES—William Hayes Breuer.

Pike County

BOWLING GREEN—James Brown Riggs. FRANKFORT—Jacob Jenkin Kennedy. LOUISIANA—Charles P. Lewellyn; Ira Hamilton Miller; Joseph Bryson Unsell; Sylvanus Holsey Warfield. NEW HARTFORD—Ray Jackson Gay.

Platte County

FARLEY—Lee Hanville Winemiller. PLATTE CITY—Grundy Cockrill Coffey. WALDRON—Cadwallader Hamilton Atchison. WESTON—Lewis C. Calvert.

Polk County

FAIR PLAY—Charles H. Brown. HUMANSVILLE—Richard Lee Russell.

Pulaski County

BLOODLAND—Cyrus Mallette.

Putnam County

LEMONS—Benjamin Elden Cobb.

Ralls County

PERRY—Charles Dick Manefee.

Randolph County

HIGBEE—Roscoe C. Campbell. JACKSONVILLE—Carl C. January. MOBERLY—Godfrey O. Cuppaidge; Thomas Simpson Fleming; Paul Campbell Davis; Stephen Thomas Ragan; Ralph Rayburn Simmons; Roderick Dhu Streetor.

Ray County

ORRICK—Robert Sheetz.

Reynolds County

CENTERVILLE—Loren B. Ralls.

Ripley County

DONIPHAN—John Robert Hume; Carter Atwater Proctor.

Saline County

MARSHALL—Guthrie Eugene Scrutchfield. SWEET SPRINGS—Clyde Wallace Parsons.

LITTLE ROCK—William Lowery Sharp.

Schuyler County

LANCASTER—William Advance Potter.

Scotland County

MEMPHIS—Abram Edson Platter. RUTLEDGE—Wallace Sidney Petty.

Scott County

CHAFFEE—William Ozro Finney. BLODGETT—Roy Kinkrough Ogilvie. SIKESTON—Trentis V. Miller; George W. H. Presnell; Abraham Lincoln Stepp.

Shannon County

KOLLER—William Thomas Eudy.

Shelby County

CLARENCE—Stanley Montjoy Hall; Dennis Edward Singleton. LENTER—Adolph Mitchell Wood. SHELBINA—Richard S. Battersby; Florien Vaughn. SHELBYVILLE—George E. Farr.

St. Charles County

FORISTELL—R. C. McDonald Millar. ST. CHARLES—August Anton Gossow; Otto Brueggemann Ilch; Samuel Robert Johnson; Frank Joseph Tainter. PORTAGE DES SIOUX—U. S. Grant Arnold; Charles Albert Barnard. WEST ALTON—George Rue Pennington.

St. Clair County

APPLETON CITY—Gerald C. Bates; Duke Girdner Divine. OSCEOLA *—Charles Alfred Smith.*

St. Francois County

ELVINS—Edwin Eugene Whiteside. FARMINGTON—William George Patton; George Lancaster Watkins. LEADWOOD—Reuben Appleberry; James William Huffman.

St. Genevieve County

BLOOMSDALE—Frank Alvin Elders. COFFMAN—George McClellan Hamilton. ST. GENEVIEVE—Louis Joseph Birsner.

St. Louis County

BALLWIN—Otto William Koch. CLAYTON—Dudley Earl Mackey. JEFFERSON BARRACKS—Norman E. McBeth; Waldo Harrison Will. *KIRKWOOD—Ralph Ellis Murrell; Harry Gage Wyer.* KOCH—Guy Frank Robinson. LUXEMBURG—Roy Cameron Dripps. POND—Joseph Wilson Dean. WEBSTER GROVES—Harold Arrott Goodrich.

St. Louis City County

ST. LOUIS—Frederick Book Abbott; Robert D. Alexander; Nathaniel Allison; Carl Jacob Althans; Claude Lester Armstrong; John Hinton Armstrong; Joseph T. Axline; Treston R. Ayars.

Oscar Frank Baerens; Frederick Warren Bailey; Elbert Baker; Roscoe L. Barlow; Charles M. Bauman; Edmond Bechtold; Hubert Bowler Beedle; Howard H. Bell; Grover Cleveland Black; Joseph M. Blackemore; Vilray Papin Blair; Lux H. Bock; David C. Bosserman; Thomas Kinsey Bowles; Oscar Franklin Bradford; William Charles Bradley; Howard Conley Brashear; Joseph Francis Bredech; Harry L. Bremser; William Carr Broadhead; Henry Spence Brookes Jr.; Theodon Prewitt Brookes; John Young Brown; Wilbur Kenneth Brown; Richard Shepard Bryan; James R. Bunch; Charles Henry Burdick; Cyrus Edgar Burford; Emil H. Burgher; Robert Burns Jr.; Stanley S. Burns; Montrose T. Burrows; Robert E. Byrns.

James Graham Calhoun; Solon Cameron; Cecil Stevenson Campbell; Oliver Howard Campbell; Harry D. Carley; William Marshall King Chattle; Ira R. Clark; Horace Fletcher Cleveland; Malvern B. Clopton; John Howard Cochran; Ernest Linwood Coffin; James Thomas Cook; Ralph L. Cook; Edward Louis Cooley; Thomas Egner Cooper; William Thomas Coughlin; Harry Sturgeon Crossen; Robert M. Cullison; William Devine Davis; William Thomas Dean; Bradford French Dearing; Elliott Knight Dixon; James Clifford Donahue; Thomas Leo Draney; Clifton Rogers Dudley; Clyde Percy Dyer.

William August Edler; Edwin Douglas Edwards; Ralph Victor Ellis; Edwin C. Ernst; Frederick C. Esselbruegge; Fayette Clay Ewing; Harold William Fay; David Patrick Ferris; Joseph Leo Ferris; Walter Fischel; Roland Frederick Fisher; Moyer Springer Fleischer; Paul R. Fletcher; John Albert Flury; Howard Marion Foster; Sylvester Daniel Fox; Adolph Mitchell Frank; Walter Floyd Fry; Robert M. Funkhouser; Edwin Clarence Funsch.

Edmond Erwin Gallagher; Fred LeGrande Gibbs; Robert Henry Gibson; Allan Arthur Gilbert; William W. Gilbert; William Paul Glennon; Andrew Joseph Gettinger; Max Aaron Goldstein; Frank Newton Gordon; Frank De Vore Gorham; Harry Gus Greditzer; Albert Jacob Griot; George August Griot.

Ferd [illegible]; Frederick Hagler; Claude Dickerson Halley; Albert [illegible] Orval Hamilton; Schuyler Colfax Harbour; Louis [illegible] son Joy Hawley; Solon Earl Haynes; Charles Henry Hecker; Lloyd Lewis Held; *Aloys Severin Helthaus;* Walter E. Hennerich; Harold C. Herrick; Charles Edward Herriot; Scott Heuer; George Washington Heuman; Abraham Dana Hobson; Marc Ray Hughes; James [illegible] ph Lewis Hutton; Joseph Charles Hynes; Willia [illegible]

Wal [illegible] Walford Johnson; Tucker Jerome Jones; *Don E* [illegible] ee Kelly Jr.; Leon Woodford Kelso; Andrew Frede [illegible] Le Roy Kenney; Roland S. Kieffer; Walter C. G. [illegible] William Klippel; Arthur William Koessel; John [illegible] as Clarence Kopelowitz; Martin Flad Kouri; Frede [illegible]

James Clifford Landree; Herbert S. *Langsdorf;* Hollie Linder; Edward Xavier Link; Joseph W. Larimore; William S. Lawrence; Elbert Johnson Lee Jr.; Abram C. Leggat; Edwin Partridge Lehman; Sidney Saul Levin; James Lewald; Benjamin William Lewis; William Edison Lockwood; Hanau Wolf Loeb; Virgil Loeb; Maurice Julius Lonsway; Paul Steinberg Lowenstein; William H. Luedde; Drew Luten; Harry Webster Lyman.

Alvin Henry Maeys; Paul P. Maher; Clarence Martin; Eugene Mattice; Daniel McCarty; Eugene Florian McCarthy; Anthony McClory; Grover Cleveland McCormack; Thomas Corwin McClure; Hugh McCulloch; James Frederick McFadden; Roy Archie McGarry; Patrick McGennis; Ernest M. McKenzie; Bernard John McMahon; Walter Julius Mellies; Louis [illegible] Claude Bertram Meyer; William John Miche; Wil- [illegible] William Hewson Mook; Harry M. Moore; Neil [illegible] David Moran; John Campbell Morfit; Ludwig O. Muench; Carl John Muller; Charles Lucius Munson; Arthur John Murphy; Fred T. Murphy; John Harry Murphy; John Patrick Murphy; George Marshall Myers.

William Lawrence Nelson; Quitman Underwood Newell; Ralph Edgar Niedringhaus; Edwin Adelbert Noll; Scott Omlen; Eugene Lindsay Opie; Robert Emmet Owen; Louis Gregory Pawelek; Richard Johnson Payne; Kenneth Cleland Peacock; Joseph Carroll Peden; Fred Selby Perrings; Charles Augustus Pfeffer; George Marquet Phillips; Claude Dildine Pickrell; Edgar Everett Poos; Lawrence Tyler Post; Martin Hayward Post Jr.; Jerome Frederick Potts; Herbert Hall Price; Arthur Walter Proetz; Madison James Pulliam.

Gerhardt H. Raithel; John Roy Ranson; Amand N. Ravold; James Cresent Reddington; Joseph John Reilly; George Lesley Riley; Thomas L. Rives; Hugh Earl Rogers; Dalton Keats Rose; Joseph *Rothman;* Lawrence Augustus Ryan; Linus Martin Ryan.

Llewellyn Sale; William Joseph Say; Joseph Charles Schafer; Abe Lewis Scheff; Robert Er [illegible] David E. Schmalhorst; Irwin Henry Schmidt; Edgar [illegible] Louis Walter Schreiber; Harry William Schumac [illegible] Schwab; Gabriel Seelig; Claude L. Sellers; Omar Richard Sevin; Arthur Harry Sewing; James Wilbur Shankland; Nowelle Wallace Sharpe; [illegible]; Charles *Henry Shumaker; Frederick Casimir Simon;* [illegible]; William I. Smith; Raymond Mills Spivay; William August Henry Steinmann; John Walker Stewart; Joseph Edgar Stewart; Samuel Smith Stewart; Arthur Edgar Strauss; Orril Le Grand Suggett.

Lloyd Lewis Tate; Herbert Isaac Taylor; George Averna Telfer; James Campbell Thomson; Joseph Lynn Thurman; John Leo Tierney; Thomas Noxon Toomey; Albert Robert Tormey; Vincent Francis Townsend; Alois Edward Turek; Waldemar Ude; Hillel Unterberg; Leon Vincent Urbanowski; John Russell Vaughan; Borden Smith Veeder; Robert Vinyard; Charles Augustus Vosburg.

Carl H. Wachenfeld; Allen Gans Wainwright; Lancaster George Washington; Ernest Darrington Weaver; Hooper Winslow Welch; Oliver C. Wenger; Samuel Franklin Wennerman; Clarence Mansur Westerman; Jesse Brown White; Wistar T. White; Otto Julius Wilhelmi Jr.; James E. Williams; Robert Sidney Williams; Hugh Joseph Witwer; Sidney J. Wolfermann; James Ballance Wood; Frederick Eno Woodruff; Daniel Paul Wright; Henry McC. Young; John Smith Young; William Bransford York; Nicholas Aloys Young; George Frederick Zachritz.

ST. LOUIS—Louis A. Kempff; Lurin Patrick Macklin; Harvey Gilmer Mudd; Louis Edward Printy; William Stanley Reilly; Julius Albert Rossen; DeWilson Timberman; George Louis Tonneli.

Stoddard County

ADVANCE—Charles Moore. BELLE—Grover Clayton Johnson. BERNIE—Robert William Sayre. BLOOMFIELD—John Wilson. DEXTER—William C. Dieckman; Frank LaRue. LEORA—Edward Ford.

Sullivan County

OSGOOD—Ursa Cleveland Weston.

Taney County

BRADLEYVILLE—Eugene Bernhardt Munier.

Texas County

CABOOL—Louis Martin Edens. HOUSTON—Elmer P. Blankenship. LICKING—Leslie C. Randall. SUMMERVILLE—Luther Hayes Wallen.

Vernon County

BRONAUGH—Fred Clayton Albright. NEVADA—Douglass Haggard.

Wayne County

LEEPER—Roy Jefferson Owens. PIEDMONT—Lee Egbert Toney.

Webster County

MARSHFIELD—John Rufus Bruce.

Worth County

DENVER—Lewis H. Long. GRANT CITY—Welcome Blaine Tilton.

Wright County

MOUNTAIN GROVE—Edward Christian Wittwer.

MONTANA STATE MEDICAL ASSOCIATION

Officers 1917-18

Arthur Morrow, President	Kalispell
H. H. Judd, First Vice President	Bozeman
G. E. Brown, Second Vice President	Miles City
E. M. Gans, Third Vice President	Judith Gap
E. G. Balsam, Secretary-Treasurer	Billings

Council Districts and Officers

First District.—Silverbow County. J. A. Donovan, Councilor, Butte.

Second District.—Missoula County. H. C. Smith, Councilor, Missoula.

Third District.—Deer Lodge and *Fergus counties.* E. D. O'Neill, Councilor, Kalispell.

Fourth District.—Cascade County. LeRoy Southmayd, Councilor, Great Falls.

Fifth District.—Chouteau and Valley counties. M. D. Hoyt, Councilor, Glasgow.

Sixth District.—Beaverhead County. E. L. Sutherland, Councilor, Sheridan.

Seventh District.—Lewis and Clark County. B. C. Brooke, Councilor, Helena.

Eighth *District.—Flathead* County. W. W. Andrus, Councilor, Miles City.

Ninth District.—Park County. D. Claiborn, Councilor, Bigtimber.

Tenth District.—Gallatin County. C. W. Jump, Councilor, Bozeman.

MONTANA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Comms'd in M.R.C., etc.
Beaverhead	4,714	673.4	7,200	1,028	7	..	5	6	3	..
Big Horn	9,775	1,629.2	4,950	825	6	..	4	5	1	..
Blaine	12,900	1,842.8	7,900	1,128	7	..	6	6	2	..
Broadwater	1,194	238.8	3,812	762	5	..	4	4	2	1
Carbon	2,438	152.4	9,200	575	16	..	12	14	8	2
Carter	.....	.....	......	.....	5	2	2	3	..	1
Cascade	3,384	61.5	29,063	528	55	2	28	49	40	17
Chouteau	15,972	1,064.8	17,700	1,180	15	..	11	13	7	2
Custer	13,156	1,012.0	13,450	1,034	13	2	10	10	4	2
Dawson	12,231	815.4	31,600	2,106	15	..	12	12	3	5
Deerlodge	749	44.0	6,250	367	17	1	10	15	13	4
Fallon	9,500	1,900.0	10,150	2,030	5	..	5	5	2	1
Fergus	9,078	245.3	21,950	593	37	2	23	28	17	9
Flathead	6,070	209.3	11,800	406	29	2	18	24	18	4
Gallatin	2,513	119.7	16,281	775	21	..	12	19	15	7
Granite	1,637	409.2	2,742	685	4	..	2	3	2	1
Hill	*14,800*	*778.9*	*11,100*	584	*19*	..	*17*	*18*	10	4
Jefferson	1,650	330.0	5,399	1,079	5	..	2	3	2	..
Lewis and Clark	3.465	108.3	22,211	694	32	4	17	24	20	7
Lincoln	3,530	441.1	8,500	944	9	..	3	5	2	..
Madison	4,581	416.3	6,729	611	11	..	10	11	7	..
Meagher	3,766	1,255.3	6,850	2,283	3	..	..	..	2	2
Mineral	1,700	1,700.0	2,600	2,600	1	..	1	1	..	..
Missoula	4,243	117.9	13,450	373	36	..	22	32	26	4
Musselshell	3,400	283.3	11,450	954	12	..	11	11	9	2
Park	2,675	222.9	12,405	1,033	12	..	11	12	10	3
Phillips	13,010	2,602.0	8,500	1,700	5	..	5	5	1	1
Prairie	2,100	700.0	4,950	1,650	3	..	2	2	..	..
Powell	2,559	639.7	6,600	1,650	4	..	3	3	2	1
Ravalli	2,447	116.5	13,571	646	21	1	16	18	5	3
Richland	3,350	372.2	6,250	694	9	..	8	8	2	1
Rosebud	9,663	690.2	10,850	775	14	..	10	12	5	4
Sanders	2,859	357.3	4,950	618	8	1	3	7	2	1
Sheridan	13,400	432.2	12,150	391	31	..	18	24	3	6
[1]Silver Bow	698	9.7	59,574	827	72	1	44	61	43	11
Stillwater	5,500	550.0	6,850	685	10	2	4	6	5	1
Sweet Grass	2,918	972.7	6,250	2,083	3	..	2	3	3	..
Teton	7,581	329.6	10,500	456	23	1	20	21	6	5
Toole	2,300	460.0	5,900	1,180	5	..	4	5	1	..
Valley	13,515	1,126.2	4,250	354	12	..	8	11	..	3
[2]Wheatland	......	....	.....	.....	4	..	3	4	3	1
Wibaux	2,400	1,200.0	4,950	1,475	2	..	..	..	..	1
Yellowstone	5,729	150.8	12,150	319	38	3	27	37	22	4
Totals	240,150	363.3	472,987	715	661	24	435	560	328	121

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1. Includes Butte, population 44,057; physicians 71 [M.R.C. 11].
2. County recently organized; area and population included with that of other counties.

HONOR ROLL

Broadwater County

TOSTON—Aaron Tomlin Lukins.

Carbon County

RED LODGE—Waldo Frederick Brinkman; Carl Louis Koehn.

Carter County

EKALAKA—George Albert Baker.

Cascade County

CASCADE—Donald Archibald McLennan; Frank Cline Vanatta. GREAT FALLS—Solomon David David; Willoughby George Dye; Edwin James Greer; William Jordan Lakey; E. Martin Larson; Albert Forrest Longeway; Alexander M. Macaulay; William Dunn Madden; Ambler R. Patton; Geo. Hampton Putney; Karl Avery Snyder; LeRoy Southmayd; Charles Emeric Kerr Vidal; Donald Kendrick Woods; Frank Albert Woodward.

Chouteau County

FORT BENTON—James Francis Michael Murphy. BIG SANDY—George Joseph Juckem.

Custer County

MILES CITY—Wm. Henry Buskirk. STACEY—Thomas Archibald MacKenzie.

Dawson County

GLENDIVE—Lionel A. Anderson; Robert E. Hathaway. JORDAN—David Alfred Baker. LINDSAY—Bigelow *Putnam Blackstone.* RICHEY—Serge Androp.

Deer Lodge County

ANACONDA—Max Allan Dorland. LIVINGSTON—Carl Arthur Johnson. WARM SPRINGS—Rae Hazen Cather; William Edward Long.

Fallon County

BAKER—Lindsay Wilson Baskett.

Fergus County

DENTON—James Lloyd Jenson. GRASS RANGE—John D. Bartlett. HILGER—Frank Webster Cotton. HOBSON—Walter Eugene Estabrook. LEWISTOWN—John Timothy Foley; Ralph Sherwood Hedges. MOORE—Earl Stevens Porter; Julio Ramson Soltero. ROY—Winfield Scott Faulds.

Flathead County

KALISPELL—Lawrence Glenn Grifis; Wm. Starling Little; Edward Daniel O'Neill. POLSON—George Bernhard Owen.

Gallatin County

BOZEMAN—Lee K. Gibson; C. F. Jump; Clyde Watkins Jump. LOGAN—Charles Edgar Whitehead. THREE FORKS—Clinton Luman Hoy; Clinton Virgil Reed; Walter Henry Stephan.

Granite County

DRUMMOND—Bernard John Heetdirks.

Hill County

CHESTER—Albert Angelo Pastene. HAVRE—Austin Leroy Ward. HINGHAM—Arthur A. Husser. INVERNESS—Francis St. C. Reilly.

Lewis and Clark County

EAST HELENA—Ross D. Wright. HELENA—Philip Gillett Cole; Alozo B. Eckerdt; Ellis A. Johnston; William Cresby Ridell; Edward Augustus Sweet. LINCOLN—James Harris Irwin.

Meagher County

WHITE SULPHUR SPRINGS—Adolph Thomas Gilhus; Weaver Burnside Rogers.

Missoula County

MISSOULA—James David Hobson; William E. Shea; John Jerome Tobinski. RONAN—Andrew Karl Resner.

Musselshell County

ROUNDUP—James Newton Alexander; Creswell T. Pigot.

Park County

CLYDEPARK—Joseph Chandler Denney. LIVINGSTON—Paul Lincoln Greene; Samuel Elmer Leard.

Phillips County

MALTA—Charles Edward Blankenhorn.

Powell County

DEER LODGE—Carl Otto Rinderspacher.

Ravalli County

CORVALLIS—Walter Neil King. DARBY—Herbert Hayward. HAMILTON—Robert Lincoln Owens.

Richland County

SIDNEY—Houston Haddon Parsons.

Rosebud County

FORSYTHE—William Archibald Alexander; Harry Stark Holmes; Harry J. Huene; Wendell Cotton.

Sanders County

THOMPSON FALLS—Harold A. Miller.

Sheridan County

ANTELOPE—Mark Talmage Vornholt. FROID—Charles Beno. Fleischmann. MEDICINE LAKE—Thomas M. Morrow. OUTLOOK—Louis A. Mangan. SCOBEY—Arthur Stone Needles; Claude C. Tucker.

Silverbow County

BUTTE—Eugene F. Brindjone; John E. Dutcher; Homer John Flinn; Michael Hugh Gleason; Arthur Clyde Knight; Frederick William Loring; Thomas V. Moore; Harold Schwartz; Julien Latrance Tremblay; Vezlo Oliver Ungherini; Thomas Casey Witherspoon.

Stillwater County

COLUMBUS—Charles A. Gardner.

Teton County

BRADY—Leo Martin Maguire. BROWNING—Clifton M. Rosin. BYNUM—Edward F. Dixon. CHOUTEAU—Howard W. Bateman. CUT BANK—Ralph Glass Nelson.

Valley County

GLASGOW—Mark Dickens Hoyt. NASHUA—James Ashton Lomas. OPHEIM—Grover Cleveland Sherrard.

Wheatland County

JUDITH GAP—Edward Mathias Gans.

Wibaux County

WIBAUX—Paul Leonard Ashley.

Yellowstone County

BILLINGS—Ferris Lyle Arnold; Samuel Garfield Arnold; John Harlan Bridenbaugh; Edwin Archer Gerhart.

NEBRASKA STATE MEDICAL ASSOCIATION

Officers 1917-18

Chas. L. Mullins, President................................
Vice Presidents—....................................Broken Bow
Lucien Stark..
A. W. Montgomery....................................Hartington
Joseph M. Aiken, Secretary..............................Stella
Alex. S. Von Mansfelde, Treasurer.......................Omaha
....Ashland

Councilor Districts and Officers

First District.—Douglas and Sarpy counties. J. B. Potts, Councilor, Omaha.

Second District.—Cass, Lancaster and Otoe counties. H. J. Lehnoff, Councilor, Lincoln.

Third District.—Gage, Johnson, Pawnee, Nemaha and Richardson counties. I. H. Dillon, Councilor, Auburn.

Fourth District.—Antelope, Boyd, Knox, Cedar, Madison, Wayne, Stanton, Dixon, Dakota, Thurston, Pierce and Cuming counties. L. Stark, Councilor, Hartington.

Fifth District.—Boone, Burt, Colfax, Dodge, Merrick, Nance, Platte and Washington counties. R. C. Byers, Councilor, Nickerson.

Sixth District.—Saunders, Butler, Seward, York and Hamilton counties. E. O. Weber, Councilor, Wahoo.

Seventh District.—Clay, Fillmore, Thayer, Jefferson, Nuckolls and Saline counties. W. L. Curtis, Councilor, Fairbury.

Eighth District.—Clay, Brown, Dawes, Rock, Holt, Keyapaha, Sheridan and Sioux counties. W. J. Douglas, Councilor, Atkinson.

Ninth District.—Blaine, Dawson, Buffalo, Garfield, Grant, Hooker, Logan, Hall, Custer, Howard, Greeley, Valley and Sherman counties. M. S. Moore, Councilor, Gothenburg.

Tenth District.—Adams, Chase, Dundy, Frontier, Hays, Webster, Kearney, Franklin, Phelps, Harlan. Hitchcock, Red Willow, Gosper and Furnas counties. S. P. Sanders, Councilor, Holdrege.

Eleventh District.—Arthur, Cheyenne, Deuel, Gordon, Keith, McPherson, Perkins, Kimball and Lincoln counties. H. E. Mantor, Councilor, Sidney.

Twelfth District.—Roxbutte, Scotts Bluff, Banner and Morrill counties. A. J. Stewart, Councilor, Mitchell.

HONOR ROLL

Adams County

HASTINGS—Eugene Clair Foote; Lester Kenneth Strate. INGLESIDE—Ward Willard Hedlund; Harry Jay Pittock. PAULINE—Charles Nicholas Meriwether.

HASTINGS—Samuel James Stewart.

Antelope County

NELIGH—Stanley Curtis Clements; Uen Samuel Harrison. OAKDALE—George William Earle.

Blaine County

CRETE—Francis Joseph Stejskal.

Boone County

ALBION—Herbert Peter Walker; Finley Joseph McRae. CEDAR RAPIDS—Frank Dooley Burgess. PETERSBURG—William Edward Mogan. ST. EDWARDS—Thomas Jefferson Jones.

Boyd County

BUTTE—John Ray Beatty. LYNCH—Guy Bentley Ira.

Brown County

AINSWORTH—Oscar Edwin Coleman; Tyre Kinser Jones. JOHNSTOWN—Charles Edward Remy. LONG PINE—Arthur Jacob Griot; Sam Hardeman; James C. Tucker.

Buffalo County

ELM CREEK—Charles Albert Yoder. KEARNEY—Delbert L. Hibberd; Wallace Edson Rose; Judd A. Strong.

Burt County

CRAIG—Alfred Edward Westervelt. LYONS—Frank Dell Ryder. OAKLAND—Samuel August Swenson. TEKAMAH—Henry Albert Johnson; Merritt Wood.

Butler County

DAVID CITY—Charles Edward Palmer.

Cass County

GREENWOOD—Harry Webber McFadden. WEEPING WATER—James Walter Thomas.

Cedar County

COLORIDGE—Fredk. E. Braucht. HARTINGTON—Lucien Stark; Edw. Martin Thies. RANDOLPH—Bert Fuller Gleason.

Chase County

CHAMPION—Charles Edwin Legg.

Cherry County

CODY—William Roy Cornelius.

Cheyenne County

LODGE POLE—Frank Waldo Scott. SIDNEY—Riley Edward Roche.

Clay County

EDGAR—Robert Turney Jones. FAIRFIELD—Geo. Henry Bentz.

Colfax County

SCHUYLER—Ralph S. Hart; Jesse Carl Painter; Oscar Paul Schnetzky.

Cuming County

BANCROFT—Harry Whiting Francis. WEST POINT—Harry Lee Wells.

Custer County

ANSELMO—Claude Leroy Wills. ANSLEY—Ralph Philip Higgins; Charles Lawson Housel. BROKEN BOW—Willis Edward Talbot. CALLAWAY—Roy Douglas Bryson. OCONTO—John Christopher Wade.

Dakota County

HOMER—Daniel Brooks Stidworthy.

Dawson County

COZAD—Lloyd Henry Fochtman. EDDYVILLE—James Bernard Kilo. FARNAM—Alfred E. Reeves. OVERTON—Charles B. Edwards.

Dixon County

PONCA—John M. Davey; Glyndon Angus Young.

Dodge County

FREEMONT—George James Haslam. HOOPER—Clinton Daniel Heine. NORTH BEND—Wliam Elden Doane; Paul Regan Howard.

NEBRASKA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Adams	565	12.0	22,403	476	47	1	25	40	27	6
Antelope	872	54.5	15,943	996	16	..	11	13	1	3
Arthur	725	241.7	375	125	3	..	1	1	..	..
Banner	742	247.3	1,684	561	3	..	2	2	..	..
Blaine	711	177.8	2,452	613	4	..	1	3	1	1
Boone	692	49.4	14,208	1,014	14	..	8	11	7	5
Box Butte	1,076	107.6	6,539	653	10	..	4	7	6	..
Boyd	535	41.1	9,916	762	13	2	8	9	6	2
Brown	1,235	88.2	7,990	570	14	..	6	10	5	6
Buffalo	945	29.5	23,113	722	32	..	14	22	22	4
Burt	475	29.7	12,726	795	16	..	8	12	11	5
Butler	583	30.7	15,403	810	19	..	14	16	18	1
Cass	538	18.5	19,786	682	29	1	11	25	15	2
Cedar	735	49.0	17,180	1,145	15	..	8	13	11	4
Chase	899	149.2	4,382	730	6	..	2	6	3	1
Cherry	5,979	597.9	13,241	1,324	10	..	7	9	7	1
Cheyenne	1,194	108.5	5,848	531	11	..	6	9	6	2
Clay	579	24.1	15,729	654	24	1	13	13	18	2
Colfax	405	27.0	11,900	793	15	..	10	13	6	3
Cuming	577	36.1	13,782	861	16	1	4	12	13	2
Custer	2,588	80.9	29,981	936	32	..	20	25	24	6
Dakota	253	50.6	6,767	1,353	5	..	1	3	..	1
Dawes	1,402	155.8	9,742	1,082	9	1	5	7	4	..
Dawson	985	41.0	18,695	778	24	..	14	16	14	4
Deuel	439	87.8	2,447	489	5	..	2	4	1	..
Dixon	472	24.8	12,164	640	19	2	11	11	13	2
Dodge	531	14.3	22,145	598	37	..	18	28	30	4
[1]Douglas	331	0.8	188,954	457	413	26	235	342	264	93
Dundy	927	185.4	5,312	1,062	5	..	3	3	5	..
Fillmore	576	27.7.	14,674	698	21	1	11	19	15	2
Franklin	578	38.5	10,923	728	15	1	9	12	12	..
Frontier	975	121.9	8,572	1,071	8	..	5	8	..	2
Furnas	721	48.1	12,083	805	15	..	7	11	10	3
Gage	862	17.9	30,525	635	48	1	24	30	31	3
Garden	1,652	550.7	4,844	1,614	3	..	2	2	1	1
Garfield	575	143.7	4,359	1,089	4	..	1	2	..	1
Gosper	464	154.7	4,933	1,644	3	..	1	3	2	..
Grant	726	181.5	1,341	335	4	..	1	4	1	1
Greeley	571	81.6	9,767	1,395	7	..	5	2	1	..
Hall	528	16.0	22,663	686	33	..	21	24	26	5
Hamilton	538	33.6	13,554	847	16	..	10	13	12	2
Harlan	574	44.1	9,730	748	13	..	7	10	8	1
[2]Hayes	722	.....	3,232	.....	..	..	..	..	..	..
Hitchcock	724	144.8	6,150	1,230	5	..	3	3	4	..
Holt	2,393	170.9	17,969	1,283	14	..	9	13	8	1
Hooker	722	361.0	1,382	691	2	..	2	2	..	1
Howard	561	62.3	11,103	1,233	9	..	6	8	8	3
Jefferson	578	22.2	18,060	694	26	..	14	19	17	2
Johnson	374	20.8	10,187	565	18	1	7	15	14	1
Kearney	516	46.9	9,106	827	11	..	7	9	8	1
Keith	1,068	178.0	4,962	827	6	..	4	4	1	1
Keyapaha	775	387.5	3,727	1,863	2	..	2	2	..	1
Kimball	958	191.6	2,806	561	5	..	2	3	1	1
Knox	1,114	39.8	21,288	760	28	1	15	24	17	8
[3]Lancaster	853	4.0	80,331	378	212	8	90	165	100	31
Lincoln	2,536	101.4	18,798	751	25	2	10	18	13	4
Logan	573	286.5	1,930	965	2	..	2	2	1	..
Loup	576	576.0	2,831	2,831	1	..	1	1	1	..
[2]McPherson	1,674	.....	3,519	.....	..	..	..	..	..	..
Madison	576	14.6	20,651	645	32	..	18	27	23	9
Merrick	463	25.7	11,200	622	18	1	10	12	14	2
Morrill	1,417	202.4	5,890	841	7	..	3	7	2	1
Nance	446	49.5	9,438	1,048	9	..	5	8	8	5
Nemaha	389	14.0	13,095	467	28	..	12	14	18	4
Nuckolls	579	30.5	13,459	708	19	..	13	15	14	1
Otoe	606	24.2	19,323	772	25	1	14	20	13	3
Pawnee	431	26.9	10,582	661	16	..	7	12	7	5
Perkins	886	886.0	3,202	3,202	1	..	1	1	..	..
Phelps	538	53.8	10,451	1,045	10	..	5	7	6	..
Pierce	577	52.4	11,345	1,031	11	..	4	12	9	2
Platte	673	30.6	19,923	905	22	..	11	11	18	7
Polk	430	30.7	10,521	751	14	..	5	14	19	..
Redwillow	720	42.3	12,116	712	17	1	10	11	11	3
Richardson	545	16.5	17,448	529	33	2	21	27	19	6
Rock	1,004	502.0	4,223	2,111	2	..	1	1	1	1
Saline	573	19.1	17,866	595	30	..	15	22	16	2
Sarpy	240	26.7	9,415	1,046	9	..	5	8	4	4
Saunders	756	28.0	21,179	784	27	..	14	19	13	1
Scotts Bluff	723	24.8	12,589	434	29	4	13	25	23	1
Seward	574	30.2	16,044	844	19	..	14	15	8	2
Sheridan	469	52.1	8,272	919	9	..	5	6	3	1
Sherman	573	47.7	9,539	794	12	..	4	10	..	1
Sioux	2,055	411.0	8,186	1,637	5	..	2	4	1	1
Stanton	431	71.6	7,967	1,327	6	..	2	5	5	1
Thayer	578	23.1	15,103	604	25	1	10	16	16	3
Thomas	716	358.0	1,602	801	2	..	1	1	1	..
Thurston	387	38.7	10,299	1,029	10	..	6	7	5	3
Valley	570	47.5	11,042	920	12	..	4	4	6	..
Washington	380	27.1	12,738	909	14	..	7	9	11	2
Wayne	450	37.5	10,786	989	12	1	4	10	6	3
Webster	578	32.1	12,290	627	18	..	9	13	12	3
Wheeler	578	578.0	2,970	2,970	1	..	..	1	..	..
York	575	19.2	19,096	696	30	1	16	20	11	..
Totals	75,533	48.3	1,295,896	828	1,565	64	1,020	1,557	1,173	312

1. Includes Omaha, population 167,741; physicians 398 [M.R.C. 91].
2. No physicians reported in these counties.
3. Includes Lincoln, population 46,902; physicians 174 [M.R.C. 26].

Douglas County

Henry Avery. MILLARD—John Jacob Fossler.
land Akin; Jeremiah Smyth Alexander; John Frank-
Anderson; Jos. Anthony; Grove Baldwin; Wm.
Bleick; Thomas D. Boler; Edson Lowell Bridges;

Alfred Jerome Brown; Arthur Clarence Brown; Neil Louis Criss; Clement Anthony Cummings; Arthur Lewis Davis; Delmer L. Davis; John Calvin Davis Jr.; Emile L. Delanney; Gustave Wm. Dishong; John Wm. Duncan; Lother Frederick Egan; Harold Everett Eggers; Jacob Martin Erman; Neill J. Everitt; Henry M. Fitzgibbon; Daniel Franklin.

Sanford R. Gifford; George Richardson Gilbert; Abraham Greenburg; Fredk. Marschner Hahn; Lynn Thompson Hall; Stacy B. Hall; Louis Everett Hanisch; John Madison Hench; Edwin Clyde Henry; Joseph Aloysius Henske; John Holst Jr.; Aaron Hull; Clarence Michael Hyland; Harry Jerome Jenkins; Aldis Adelbert Johnson; August Frederick Jonas; Vincent Leo Jones.

John Raymond Kleyla; Vernard Anthony Lanphier; Wm. Joseph Leary; Henry Bassett Lemere; Philip Levey; Adolph Bernard Lindquest; Arthur Lawrence Linquist; John Prentiss Lord; Emil Anderson Lynwood.

Otis Martin; James S. McAvin; Jos. Daniel McCarthy; William Joseph McCrann Jr.; Louis David McGuire; Edward Huntington McLean; William Henry Mick; Clarence Molseed; John Clyde Moore; Reuben A. Moser; Francis Patrick Murphy; Charles Thayer Needham; John Rudolph Nilson; James McDowell Patton; Robert Clayton Person; Guy Sterling Philbrick; Alva Sherman Pinto; John Beekman Potts; George Peyton Pratt; Normall Call Prince; George William Pubsley.

Leonard Otto Riggert; Wm. Lytle Ross Jr.; Benj. Carl Russum; Robert D. Schrock; Charles Francis Shook; Adolph Frank Srb; Harvey Burr Stapleton; Frank Joseph Stodden; Arthur Charles Stokes; Joseph Phillip Swoboda; Carl Leonard Swanson; Vernon Vivaldo Talcott; John Alexander Tamisica; Claude Thomas Uren; Frederick A. Van Buren; Edward Amos Van Fleet; Glenn D. Whitcomb; Wilbur Kirk Riley.

Fillmore County

EXETER—Karl Frederick Ernest Wegener. FAIRMONT—Martin Henry Deffenbaugh.

Frontier County

CURTIS—Clarence Minnick. EUSTIS—Norman Tott Hale.

Furnas County

HENDLEY—Carl William Morrow. OXFORD—Elbert Ernest Cone. WILSONVILLE—George Halley DeMay.

Gage County

FILLEY—Edward Edmond Sweeney. ODELL—Adolph Nicholas Thoms. PICKRELL—Marion Theodore Sigler.

Garden County

LEWELLEN—Clifford Leon Hooper.

Garfield County

BURWELL—James Folwell Wood.

Grant County

HYANNIS—Wm. Llewellyn Howell.

Hall County

CAIRO—Samuel Earl Metheny. GRAND ISLAND—Henry Blakeslee Boyden; Benjamin Robert McGrath; Willis Jay Redfield; John Henry Regan.

Hamilton County

AURORA—Chas. Delano Hustead; James Madison Woodard.

Harlan County

ALMA—William Clarence Bartlett.

Holt County

ATKINSON—Neal Patrick McKee.

Hooker County

MULLEN—Thos. Ernest Atkinson.

Howard County

DANNEBROG—Christian Pedersen. ST. PAUL—Royal F. Jester; Frank S. Nicholson.

Jefferson County

FAIRBURY—Hayes Hunter Culbertson; William John Hawes.

Johnson County

TECUMSEH—Joseph Milton Curtis.

Kearney County

AXTELL—Francis Allen Wells.

Keith County

OGALLALA—Charles Curtis Wallingsford.

Keyapaha County

SPRINGVIEW—Joseph Alphonse Furlong.

Kimball County

KIMBALL—Wilber K. Myler.

Knox County

BLOOMFIELD—J. Harvey Mettlen. CREIGHTON—Czar Clinton Johnson. NIOBRARA—Avedis H. Sissakian. WAUSA—Frank Clark Ghenung; Otto Theodore Hansen. WINNETON—Roy Crook. YORK—James S. Bell; Dexter D. King.

Lancaster County

BENNETT—Wm. Walter De Wolfe. BETHANY—Frank Alonzo Wilmot. HICKMAN—George W. Strough. LINCOLN—Charles H. Arnold; John M. Birkner; Martin Robt. Broman; Geo. Worthington Covey; Leslie Bane Crumrine; Har [illegible] Chas. Warren Harms; Henry Bernard Frosh; Ira [illegible] Bohn Metheny; Terrence Calvin Moyer; Arb [illegible] on; Hiram Winnett Orr; Charles W. Parks; [illegible] Spealman; Clark Dwight Spivey; Lazelle B. [illegible] lon Swartwood; Elmer S. Tenney; James E. [illegible] ruce Walker; Adin Hilton Webb; Hal. Drumm [illegible] c Woodward. NORMAL—Paul Ambrose Royal. [illegible] —Carl Wagner Sherfey.

Lincoln County

NORTH PLATTE—Earl William Fetter; Claude A. Selby; John Shaffer Simms; Frederick Josias Wurtele.

Madison County

MADISON—Arthur Emile Gadbois; Edward Olinger Wilson. NEWMAN GROVE—Frank Lee Frink; Carl Augustus Meyer. NORFOLK—Augustus Charles Barry; Harry R. Carson; Warren Martin Phillips; Peter Harold Salter; Arthur Marinus Sonneland.

Merrick County

CLARKS—Ralph Conklin Christie; Lowell Little.

Morrill County

BAYARD—Grover Cleveland Rice.

Nance County

BELGRADE—Onley Alphonso Brittell. FULLERTON—Roy Ellsworth Hall. GENOA—Homer Davis; Henry Eugene King; Creighton David Williams.

Nemaha County

AUBURN—Edgar Cline; Ira Hugh Dillon. PERU—William D. Jack; Bartlett Lockwood Shellhorn.

Muckolls County

BOSTWICK—William James Pinkerton.

Otoe County

NEBRASKA CITY—William Edmonds; Martin Luther Koser. PALMYRA—Chas. Percy Charlton.

Pawnee County

PAWNEE CITY—Earl Brisbin Brooks; James Clyde Waddell. STEINAUER—Walter Lawrence Johnson. TABLE ROCK—Miles John Breuer; Leo Dow Harman.

Pierce County

OSMOND—Ellis Herbert Whitehead. PIERCE—William Sidney Dinsmore.

Platte County

COLUMBUS—Charles H. Campbell; Carroll Dandola Evans, Jr.; James North Evans; William Samuel Evans; Theodore Henry Koefoot; Frank Henry Marrow; William Richard Carl Neumarker.

Red Willow County

DANBURY—McDonald Ryan; Griffith Alonzo De May. McCOOK—Roland Ray Reed.

Richardson County

BARADA—Jesse Franklin Strong. DAWSON—James Francis Kelly. FALLS CITY—Sam David Cowan; Oscar Fredk. Lang; Henry Rufus Miner. SALEM—Andrew Jackson Smith.

Rock County

NEWPORT—Clinton Quincy Dodd.

Saline County

DORCHESTER—Robert Carpenter Panter. WILBER—Louis John Storkan.

Sarpy County

GRETNA—Charles Edward Pinckney. PAPILLION—Wesley C. Becker; Oswald H. Margaret. SPRINGFIELD—John Arthur Peters.

Saunders County

WAHOO—Charles Willard Way.

Scottsbluff County

SCOTTSBLUFF—Joseph Benson Schrock.

Seward County

MILFORD—James G. Muir.
SEWARD—Edward M. Bernecker.

Sheridan County

RUSHVILLE—William Henry Crawford.

Sherman County

LOUP CITY—Otto Earle Longacre.

Sioux County

HARRISON—Frank M. Barns.

Thayer County

BELVIDERE—Walter Edwin Kelly; Thomas Lahners, Jr. HEBRON—Joseph Harold Boyes.

Thurston County

PENDER—John Buis. ROSALIE—J. Jay McCarl. WALTHILL—Irwin Limburg.

Washington County

ARLINGTON—George Frederick Hawes. BLAIR—Louis Lancelot Burstein.

Wayne County

CARROLL—William Henry Phillips. WAYNE—Earl B. Erskine. WINSIDE—Victor Lamont Siman.

Webster County

BLUE HILL—Philip Henry Bartholomew; Claude Ross Laird. COWLES—William E. M. Devers.

Woodbury County

SHICKLEY—Laird W. Elwood.

NEVADA STATE MEDICAL ASSOCIATION

Officers 1917-18

H. A. Brown, President..
Vice Presidents—..Reno
Raymond St. Clair..
H. J. Brown..Reno
M. A. Robison, Secretary..Reno
....Reno

Councilors

A. [illegible]
R. [illegible]
W. [illegible]
C. [illegible]
E. J. [illegible]
........Goldfield

H. Ostroff..Reno
J. T. Rees..McDermott
W. M. Edwards..Mason
J. D. Campbell..Pioche

NEVADA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Churchill.......	5,050	561.1	4,257	428	9	2	4	6	1	..
Clark..........	8,045	1,609.0	4,576	915	5	..	4	4	..	1
Douglas........	733	244.3	2,159	719	3	1	2	2	2	1
Elko...........	17,059	1,218.5	9,918	708	14	..	11	13	7	4
Esmeralda......	7,432	1,061.7	7,385	1,075	7	..	3	4	4	1
Eureka.........	4,157	4,157.0	1,830	1,830	1	..	1	1	1	..
Humboldt......	15,857	1,057.1	8,519	569	15	..	9	14	10	6
Lander.........	5,721	2,860.5	1,970	985	2	..	2	2	1	..
Lincoln.........	10,411	2,105.2	4,808	961	5	..	2	3	1	1
Lyon...........	1,509	251.5	4,516	752	6	..	3	5	3	1
Mineral........	7,120	890.0	7,384	923	8	..	3	6	5	2
Nye............	18,294	1,524.5	12,163	1,013	12	1	3	10	11	..
Ormsby.........	156	19.5	3,796	474	8	..	4	7	5	1
Storey.........	251	251.0	3,015	3,015	1	..	1	1	1	..
Washoe.........	6,251	145.4	23,487	546	43	..	19	34	28	7
White Pine.. ..	8,795	676.5	11,441	880	13	..	11	11	7	6
Totals........	116,941	769.3	111,284	732	152	4	82	123	86	31

HONOR ROLL

Clark County

LAS VEGAS—Halle Lincoln Hewetson.

Douglas County

GARDNERVILLE—William Leonard Howell.

Elko County

ELKO—Eric Munk; Claudius Wilson West. OWYHEE—Roland Doyle Russell. TUSCARORA—Charles Edgar Secor.

Esmeralda County

GOLDFIELD—Delos Ashley Turner.

Humboldt County

LOVELOCKS—John Chapel Kitchen. McDERMITT—Only J. Chaney; John Thomas Rees. PARADISE VALLEY—Lawrence Raymond Knorr. WINNEMUCCA—Edward David Giroux; Charles Edison Swezy.

Lincoln County

CALIENTE—Frank Tinges.

Lyon County

YERINGTON—Granville Ernest Leavitt.

Mineral County

MINA—James Porter Crawford; Bruce McVean Mackall.

Ormsby County

CARSON CITY—William J. Circe.

Washoe County

RENO—Herbert Augustus Abbott; Benjamin Frazier Cunningham; George McKenzie; Henry Ostroff; William Calvin Roller; Anthony Stadtherr; Raymond St. Clair.

White Pine County

ELY—Albert Franklin Adams; Isaac Alexander; Clifford Ashby; Walter Sanford Holmquist. KIMBERLY—Ray Verplank Larzalere. RUTH—David Wade Bedinger.

NEW HAMPSHIRE MEDICAL SOCIETY

Officers 1917-18

F. S. Towle, President..Portsmouth
Emdon Fritz, Vice President..Manchester
D. E. Sullivan, Secretary..Concord
D. M. Currier, Treasurer..Newport

Councilors

Belknap County.—A. H. Harriman, Councilor, Laconia.
Carroll County.—Fred E. Clow, Councilor, Wolfeboro.
Cheshire County.—Charles S. Walker, Councilor, Keene.
Coos County.—Richard E. Wilder, Councilor, Whitefield.
Grafton County.—Fredk. von Tobel, Councilor, Lebanon.
Hillsboro County.—Frank E. Kittredge, Councilor, Nashua.
Merrimack County.—Robert J. Graves, Councilor, Concord.
Rockingham County.—A. W. Mitchell, Councilor, Epping.
Strafford County.—F. L. Keay, Councilor, Rochester.
Sullivan County.—E. M. Fitch, Councilor, Claremont.

HONOR ROLL

Belknap County

LACONIA—Henry S. Beckford. MEREDITH—Alexander Borland. TILTON—Theron Howard Huckins.

Camden County

HADDONFIELD—William Sumner Long.
MERCHANTVILLE—Edgar Nathan Cowan.

Carroll County

NORTH CONWAY—Samuel Dryden Snow. SANBORNVILLE—John Carl Eckhardt. WEST OSSIPEE—Lester W. Lord.

Cheshire County

ALSTEAD—Bayard Taylor Mousley; Lee Chamberlain Stillings. EAST JAFFREY—Lawrence Brown Hatch. GILSUM—Harry George Williams. KEENE—Joseph R. Helff; Robert Ward Holmes; John Jacob Osterhout; Charles S. Walker.

NEW HAMPSHIRE

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Belknap	397	10.7	22,611	611	37	4	15	22	25	3
Carroll	955	32.9	16,316	562	29	1	13	20	18	3
Cheshire	728	12.8	30,659	537	57	4	24	39	40	8
Coos	1,798	52.9	31,691	932	34	1	15	24	29	6
Grafton	1,729	24.0	42,242	586	72	3	28	55	53	12
[1]Hillsborough	985	55.3	135,875	738	184	11	80	132	150	32
Merrimack	932	10.5	53,995	606	89	7	42	60	67	10
Rockingham	691	8.5	52,968	653	81	3	37	54	61	9
Strafford	379	7.9	38,951	811	48	1	14	33	36	1
Sullivan	527	20.3	20,305	708	26	2	12	17	23	2
Totals	9,031	13.3	445,613	677	657	37	270	456	502	92

1. Includes Manchester, population 79,507; physicians 196 [M.R.C. 22].

Coos County

BERLIN—*Arsene Lavallee.* *COLEBROOK—Walter Leigh Barbour.* LANCASTER—Howard Wilfred *Cleasby*; Homer Brandel Smith. NORTH STRATFORD—James Charles Thompson. WHITEFIELD—John Bachop Warden.

Grafton County

BETHLEHEM—Millard Cressey Clark. CANAAN—Persons W. Wing. GRAFTON—Lee Henry Knapp. HANOVER—Percy Bartlett; John M. Gile; Howard Nelson Kingsford. HAVERHILL—Fred Cutler Russell. LEBANON—Daniel Robert Chase. LITTLETON—Winfred Oren Brown; Edwin Alga Cameron. PLYMOUTH—Ernest Lorne Bell. RUMNEY—John Almus Drew.

Hillsboro County

BENNINGTON—Guy Daniel Tibbetts. GOFFSTOWN—Maurice Albert Stark. GRASMERE—Eddy Benjamin Swett. MANCHESTER—Melvin Pirl Badger; Pierre Bergeron; Benjamin P. Burpee; Walter Theodore Crosby; Clarence Eugene Dunbar; George Francis Dwinell; George Varnum Fiske; Noel Eusebe Guillet; William P[illegible] Henry Lovely; Samuel Miller; John Christopher [illegible] Perkins; Harris Earle Powers; James Joseph [illegible] Robinson; Henry Ladd Stickney; Amos G. Straw; Charles Alton Sturtevant; Daniel Joseph Sullivan; George Marshall Watson; Arthur Fitts Wheat. MILFORD—Bertell L. Talbot. NASHUA—Albert Edward Brownrigg; Charles Everatt Congdon; Stilman George Davis; Oswald S. Maynard; Augustus W. Shea. PETERBORO—Frank Brooks Foster.

Merrimack County

CONCORD—Henry Hubbard Amsden; Robert Oscar Blood; Harold James Connor; Arthur Bickford Howard; *Goodwin Adolph Johnson*; Carlton Ray Metcalf; Phllias Arthur Pion; Fred Alvah Sprague; Russell Wilkins. EAST ANDOVER—Edward Chase Durgin. FRANKLIN—James Brown Woodman. HENNIKER—Cheney Isaac Cole. *HOOKSETT—Leopold* Theodore Togus. NEW LONDON—Charles Allen Lamson. SUTTON—William Plummer Clough.

CONCORD—Lawrence Richardson Hill.

Rockingham County

EXETER—John G. W. Knowlton; Ralph Sherburne Perkins. FORT CONST[illegible] HAMPSTEAD—Elmer Ellsworth Lake. [illegible] ck Hanlon; George Andrew Tredick; Wallis [illegible] —*Forest Jay Drury.*

Strafford County

DOVER—Fred Chambers Goddard; John Charles Lawlor.

Sullivan County

CHARLESTOWN—John Ernest Toye. CLAREMONT—Earl Percy Cushman.

MEDICAL SOCIETY OF NEW JERSEY

Officers 1917-18

Wm. G. Schauffler, President..........Lakewood
Thos. W. Harney, First Vice President..........Orange
Gordon K. Dickinson, Second Vice President..........*Jersey City*
Philander A. Harris, Third Vice President..........Paterson
Harry A. Stout, Corresponding Secretary..........Wenonah
Thos. N. Gray, Recording Secretary..........East Orange
Archibald Mercer, *Treasurer*..........Newark

Councilor Districts and Officers

First District.—Sussex, Warren, *Morris and* Essex counties. *Christopher* C. Beling, Councilor, Newark.

Second District.—Union, Bergen, Hudson and Passaic counties. John C. *McCoy, Councilor,* Paterson.

Third District.—Mercer, Middlesex, Somerset and *Hunterdon counties.* W. A. Clark, Councilor, Trenton.

Fourth District.—Camden, Burlington, Ocean and Monmouth counties. W. H. Iszard, *Councilor, Camden.*

Fifth District.—Cape May, Cumberland, Atlantic, Gloucester *and Salem* counties. James Hunter, Jr., Councilor, Westville.

HONOR ROLL

Atlantic County

ATLANTIC CITY—Paul Benjamin Bender; David A. Berner; Richard Bew; Filbert Richard *Corson*; Edward Guion; Adolph A. Gurin; Philip Marvel; Norman James Quinn; Samuel Lyon Salasin; Edward Sterne Sharpe; Charles Hendry DeTurck Shivers; Samuel Stern; Carl Surran; Harry Gordon *Thigpen*; *Herman* Trager; Edward Foy Uzzle; Edwin Myron Weil; Samuel Elias Weiner; Joseph T. White; Gurney *Williams.* AUDUBON—William Henry Haines. HAMMONTON—Joseph Clarence Bitler; Wm. Earle McIlvaine. LONPORT—Arthur Moses Greenwood. PLEASANTVILLE—Halvor Larson Harley; James Frank Wallis.

NEW JERSEY

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
[1]*Atlantic*	569	3.6	92,895	597	156	6	80	124	92	26
Bergen	237	2.0	195,097	1,667	117	3	90	95	79	19
Burlington	815	10.4	78,058	1,000	78	4	39	57	46	12
[2]Camden	222	1.2	174,617	964	181	12	81	136	69	24
Cape May	265	8.3	26,301	853	32	1	17	25	19	6
Cumberland	500	6.7	61,239	816	76	6	39	57	29	11
[3]*Essex*	127	0.1	635,172	797	796	44	476	687	474	133
Gloucester	332	7.1	46,114	983	47	1	17	26	27	8
[4]Hudson	43	0.1	647,589	1,384	468	19	308	397	252	55
Hunterdon	437	1.2	35,155	817	43	1	23	27	28	3
[5]Mercer	226	1.3	153,759	883	174	6	100	138	82	37
[6]Middlesex	312	3.2	157,029	1,638	96	2	54	79	62	8
Monmouth	479	3.5	112,880	817	138	6	69	97	44	27
Morris	475	4.6	84,282	818	103	7	56	68	67	15
Ocean	637	16.3	23,699	607	39	1	16	31	19	3
[7]Passaic	196	0.9	260,212	1,182	220	..	126	189	110	45
Salem	343	7.1	31,630	658	48	3	18	32	25	13
Somerset	305	5.7	46,278	873	53	3	22	37	32	7
Sussex	529	20.3	28,714	1,104	26	..	11	16	18	5
[8]Union	103	0.61	181,636	1,087	167	8	86	136	97	26
Warren	362	7.4	47,132	961	49	5	13	35	30	2
Totals	7,514	2.5	3,119,558	1,024	3,046	147	1,747	2,489	1,721	518

1. Includes *Atlantic City, population* 59,515; *physicians 130* [M.R.C. 20].
2. Includes Camden, population 108,117; physicians 120 [M.R.C. 16].
3. Includes East Orange, population 43,761; physicians 66 [M.R.C. 9], also Newark, population 418,789; physicians 529 [M.R.C. 83], also Orange, population 33,636; physicians 45 [M.R.C. 10].
4. Includes Bayonne, population 72,204; physicians 47 [M.R.C. 8], also Hoboken, population 78,324; physicians 57 [M.R.C. 14], also Jersey City, population 312,557; physicians 244 [M.R.C. 42], also West Hoboken, population 44,386; physicians 34 [M.R.C. 4].
5. *Includes Trenton, population 113,974;* physicians 139 [*M.R.C. 38*].
6. Includes Perth Amboy, population 42,807; physicians 23 [M.R.C. 6].
7. *Includes Passaic, population 74,478; physicians 62* [M.R.C. 13], *and* Paterson, population 140,512; *physicians* 142 [M.R.C. 30].
8. Includes Elizabeth, population 88,830; physicians 58 [M.R.C. 10].

Bergen County

ALLENDALE—*Robert William Rodman.* [illegible] Schmidt. EAST RUTHERFORD—Paul O'B[illegible] Lee Loomis Bell. GARFIELD—Charles B. [illegible] Philip E. Brunda [illegible] Zachary Orgel. [illegible]; *James T. Wyckoff.* *MAYWOOD—Fra*[illegible] *Alburtus Vandewater.* RAMSEY—Harold Ellsworth Gillett. [illegible] Walter Franklin Keating; William Lo[illegible] Norman Scott *Garrison; Earl Charlt* [illegible] Gilmore Walker.

Burlington County

BORDENTOWN—Robert Buermann; Robert E. Sievers. BURLINGTON—*John S. Conroy; James MacFarland; William Eugene Rink. CHATS*WORTH—Martin William Curran. FLORENCE—Elber Brodhead Peace; John Francis Weber. MOORESTOWN—Jeremiah Boone Wintersteen. PALMYRA—Howard Raymond Rarig; Charles Francis Voorhis. PEMBERTON—Lyman Benajah Hollingshead.

Camden County

AUDUBON—Horace Breese Dean. BERLIN—Leslie Hand Ewing. *CAMDEN—Charles Fred Becker; W. Kempton Browning; William Joseph* Burke; Arthur Jay Casselman; Albert B. Davis; Irving Elmer Deibert; Walter John Jones; Thomas K. Lewis; Frederick Wm. Marcy; Herbert S. *McKinstry; George Phillip Meyer; Alexander Charles Moon;* Thomas Wolden *Phillips;* Ernest Shirly Ramsdell; William G. Shemeley; James Leo Shoemaker. COLLINGWOOD—Edward Bancroft Rogers. GLOUCESTER CITY—John Alonzo Beek; Roger Talmage *Fox.* STRATFORD—Charles Butcher Kaighn.

HADDONFIELD—William Sumner Long.
MERCHANTVILLE—Edgar Nathan Cowan.

Cape May County

CAPE MAY COURT HOUSE—J. Morgan Dix. CAPE MAY—Edgar Arthur Draper. DENNISVILLE—Clarence Wilton Way. OCEAN CITY—John Hogate Whitlcar. TUCKAHOE—James Service Knowles. WILDWOOD—Henry Hurlburt Tomlin.

Cumberland County

BRIDGETON—Irving Eugene Charlesworth; William Leslie Cornwell; Elton S. Corson; Walter P. Glendon; Millard Freeman Sewall; Alfred *G. Sheppard*; Harold Flavell Westcott. [illegible] Leavitt Cooper. DEERFIELD [illegible] BURG—George Sigars Spence. [illegible] PORT [illegible] Hatch; NORRIS—Samuel T. Day Jr. [illegible] *John* Hayes Winslow.

Essex County

BELLEVILLE—William T. Elmore; Arthur Edward Lee; Leroy Danforth Whitney; Joseph Clark Winans. BLOOMFIELD—George Vane Morse; *Arthur Gibson* Pilch; David Clark *Thompson. CALDWELL*—George B. Verbeck. CEDAR GROVE—Charles Englander; Henry Greene Smith. EAST ORANGE—Charles Winfield Buvinger; Daniel W. Fetterolf; *Albert* Groves Hulett; Ralph Hudson Hunt; James Norton Nichols; [illegible] Potter; Abram C. Reeves; Arthur *Francis Thompson*; [illegible] Miles McKinlay; John Nelson Teeter. IRVING[illegible] MAPLEWOOD—LeRoy Lorenzo Colsh. MONT[illegible] Cox; Max Dobrin; Samuel Ward Dodd; Harvey [illegible] son Harrison; Walter Barclay Mount; Arthur Richardson; Robert Dannelly Schimmelpfennig; Victor Bayard Seidler; Martin John Synnott.

NEWARK—Abram Bernard Abramowitz; Frederic Augustus Alling; Maurice Asher; Maurice S. Avidan; Aaron G. Baldwin; *George T. Barklow*; Joseph Adolph Belott; Nelson K. Benton; Carmine G. Berardinelli; Addison Hayes Bissell; George Blackburne; Dundas Ralph Campbell;

Jasper Walfred Coghlan; Harry Noah Comando; Philip Jerome Conlon; David H. Crawford; Geo. Ward Disbrow; Widmer E. Doremus; Ambrose Francis Dowd; Wells Phillips Eagleton; Arthur Jeffries Ellis; George Bache Emory; John Theodore English; Edward Francis Fitzpatrick; Benjamin Applegate Furman; Nathan Furst; George Bancroft Gale; Percy Harrison Garland; Ernest Gennell; Daniel Leon Golann; Abraham Julius Gordon; Clement Jacob Hailperin; George Edward Harben; Julius Heilbrunn; Nathan Heller; Philip Horwitz; Clarence Sumner Janifer; Meyer Jedel; David Aaron Kraker.

Matthew Samuel Levitas; Walter Clifford Liebmann; Jesse D. Lippincott; Albert Eugene Man; Frank Neeler Mandeville; Harrison Stanford Martland; Thomas Sheridan McCae; James Edward McCormick; John L. Meeker; Raymond Joseph Mullin; Rocco Marion Nittoli; Henry Boylan Orton; Frank Wilcox Pinneo; Elias Rapoport; Samuel B. Rawitz; Abraham George Reinfeld; George Stiles Reitter; Charles Rich; Samuel Rottenberg; Abraham Ruskin; Leslie Crawford Russell; William Satterer; Joseph Albert Schramm; Elbert Stetson Sherman; Benjamin James Silverstein; Howard S. Smith; Julius Sobin; Robert Edward Soule; Richard Henry Staehle; Richard Damascus Swain; Grant Thorburn; William Raymond Tilton; Irving M. Vanderhoff; Henry J. F. Wallhauser; William Henry Warren; Francis Chas. Weber; Michael Benjamin Weinstock; Jean F. Wolfs; Earl LeRoy Wood; Alfred Woodhouse; James John Lee Young; Anthony Charles Zehnder.

NEWARK—Samuel Brook; Charles William Titus..

ORANGE—John King Adams; Thomas William Harvey Jr.; Jesse Abraham Levine; Barclay Wellington Moffat;; Edwin Nicholas Riggins; Harry Rogers; Ord Ledyard Sands; Henry Trautmann; Walter Roberts Tymeson; Fredk. Herbert Von Hofe. SOUTH ORANGE—George Cummings Albee; Charles Dane; Dennis Francis O'Connor. UPPER MONTCLAIR—William Henry Areson; Carroll E. Krichbaum; Alexander John McRae. VERONA—Archer C. Bush.

Gloucester County

BARNSBORO—William P. Chalfant. GLASSBORO—Elias M. Duffield; Charles Dun Pedrick. MULLICA HILL—H. Bailey Chalfant. PITMAN—Marshall Flowers Lummis; Herbert C. Woolley. SWEEDESBORO—Vernon E. Degrofft. WOODBURY—Stephen Campbell.

Hudson County

ARLINGTON—Charles Percival Lingle; Edward Hallick Willan. BAYONNE—Sydney Chayes; Lucius Francis Donohoe; Emanuel Klein; Louis Lipschitz; Irving Henry Russotto; Edward Franklin Syrop; Morris Jacob Weiss. BOONTON—William Joseph Summers. GUTTENBERG—James Lawrence Evans. HARRISON—Bernard Aloysius O'Connor. HOBOKEN—Hugo Alexander; Charles H. Ball; Henry Valentine Broeser; Hugh Smith Chidester; George Ginsberg; Humbert Albert Granelli; Michael Simon Granelli; Livingstone Lovell Lewis; Thomas Jerome McKiernan; Joseph Erpine Paganelli; Nicholas William Pinto; John Gordon Rea; Henry Theodor von Deesten; Joseph John Walker. JERSEY CITY—Paul O. M. Andreal; Joseph Binder; Jacob Blumberg; Frank Bortone; John Anthony Botti; James Lyons Cobham; Thomas W. Connolly; Samuel A. Cosgrove; Patrick Sebastian Duffy; James G. Enright; Adolph van Prief Fardelmann; Nicholas Frederick Feury; Martin Bernard Finneran; Isador Harold Franklin; Oscar C. Frundt; Raymond De Witt Henderson; Gerald Leo Higgins; Richard Hirsch; Leonard Michael Kalaher; Arthur Owen Largay; John Joseph Lettieri; Alonzo W. Little; Francis P. K. MacMurrough; Irwin Markowitz; Walter Curt Martini; Jacob L. Mathesheimer; William Wallace Maver; Kenneth Ewing McCamey; George McLaughlin; Frank Joseph McLoughlin; Claude E. McNenney; Donald Miner; Abraham Jacob Newman; Joseph M. Rector; Jacob Rosenberg; Frank Le Lacy Sherwood; Ernest F. Slater; John Phillips Stout; Daniel Baon Street; Joseph Wechsler; James Lancelot Wilson. KEARNY—Howard Robert Dukes; William Hyman Goldstein. SECAUCUS—Irving Samuel Ingber; Robert Stewart. UNION HILL—Charles Stuart Brady; Otto Kothe. UNION—William Alva Brady; Frederick James Quigley. WEEHAWKEN—Albert G. Bising; William Thomas Callery; Maxwell Gordon Keeler. WEST HOBOKEN—Henry Frank Klaus Jr.; John Pellarin; Louis Eben Poole; Anthony Gregory Sacco. WEST NEW YORK—Lester McDonnell Coulter; Edgar W. Roberts.

JERSEY CITY—Elmer Marshall Mount, Jr.

Hunterdon County

FLEMINGTON—Floyd A. Thomas. HIGH BRIDGE—Edmund Eastwood. QUAKERTOWN—Morris Hampton Leaver.

Mercer County

LAWRENCEVILLE—Elam Knott Fee. PENNINGTON—Wm. A. Little. PRINCETON—Charles Browne; John Andrew Freese; Walter Atlee Hickman; Stewart Paton; Theobald Smith. TRENTON—Charles Franklin Adams; Herman Baldauf Jr.; Samuel Blaugrund; William Alexander Clark; Josiah Wellington Crane; Joseph Gosling Denelsbeck; Julius O. Denelsbeck; Ernest A. L. Dickinson; Philip Joseph Dorety; Edgar Bright Funkhouser; Joseph Louis Gariss; Harold Inman Gosline; Daniel Leo Haggarty; Charles Nicholas Harper; Charles Haight Holcombe; Murray Baldwin Kirkpatrick; Barney D. Lavine; William Augustus Newell; Morris Leroy Potts; Martin William Reddan; Leo Vivian Rosenthal; James Parvin Sands; Sidney Scheinman; Raymond S. Seibert; Charles Richard Sista; Clarence Johnson Slack; William Henley Smith; George Woodruff Williams. WINDSOR—E. Drew Silver.

TRENTON—Morace Doolittle Bellis.

Middlesex County

CHROME—Joseph Sidney Mark. COLONA—Raymond Albert Tommassene. ELIZABETH—Benjamin F. Slobodien. HIGHLAND PARK—Herbert William Nafety. NEW BRUNSWICK—William Joseph Condon; Anthony Gruessner; Arthur Gamble Hilliard. PARLIN—George Howard Gehrmann. PERTH AMBOY—Edward K. Hanson; Arthur LaRoe; John L. Lund; John Jacob Mann. WOODBRIDGE—Bonnette Wight Hoagland.

Monmouth County

ALLENTOWN—Harry Miller Anderson. ASBURY PARK—Jones Oliver Hudson Jr. (colored); George Walter Potts; William Denton Rowland; Earl Calvin Wagner. ATLANTIC HIGHLANDS—Brayton E. Failing. AVON-BY-THE-SEA—Ferdinand Gisler Angeny. BELMAR—William A. Newbold. FREEHOLD—James Breslin; Harvey Simpler Brown; David Stuart Carey; John C. Clayton; Earl B. Stokes. HIGHLANDS—James J. Rowland. LONG BRANCH—Stanley H. Nichols; William Henry Slocum, Walter Sterling Tilton; Joseph T. Welch; Lester Drummond Wise. MANASQUAN—Philip Garfield Hood. OCEAN GROVE—Henry Bryan Dorr. RED BANK—James Wesley Parker; Peter R. Rafferty; William Douglas Sayre. SPRING LAKE—Robert Leroy Leighton; Joseph George Savannah.

KEYPORT—Harvey Wesley Hartman.

Morris County

BOONTON—Ellery Newel Peck. BUTLER—Charles Jerome Massinger. CHESTER—Harris Day. DOVER—Augustus L. Baker; Richard L. Cook. GERMAN VALLEY—William James. GREYSTONE PARK—Lawrence Martin Collins; Louis Kaufman Henschel; Elam Filo Srygley; Franklin Charles Young. MORRISTOWN—George Haynes Lathrop; Noel Bleecker Leggett; Frank E. Perkins; Frank Hugo Pinckney; Robert Ralston Reed.

Ocean County

LAKEWOOD—Harold B. Disbrow; William G. Schauffler. TUCKERTON—Charles Higbee Conover.

Passaic County

HASKELL—Earl Elmo Griggs. PASSAIC—Joseph Clarence Balson; John Howe Carlisle; Ernesto Casino; Henry Edward Dwyer; Albert G. Jahn; Robert Nichol MacGuffie; George Francis Murmane; Harry Campbell Reynolds; Morris L. Simon; Elroy Willis Smith; John Joseph Szymanski; Arthur Henry Temple; Hyman Joseph Udinsky. PATERSON—Thomas Arthur Clay; Henry Cogan; Maurice Cohen; Thomas Vincent Connolly; Donald Austin Curtis; James Gordon Donnelly; William Aloysius Dwyer; Philip Harold Finkelstein; Hugh Vincent Gilson; Archibald Fowler Graham; Orville Reed Hagen; John J. Hainan; Sidney Charles Levine; Elias Joseph Marsh; Andrew Francis McBride; John C. McCoy; Charles Reuben Mitchell; Charles Joseph Murn; Frank Y. Neer; William Archibald Norval; Louis Milton Suchoff; Francis J. Van Noort; John S. Van Winkle; Albert Hamilton Ward; William J. Whalen; Joseph White Williams; Meyer Wishnack. POMPTON LAKES—Clarence LeFevre Vreeland.

PATERSON—Louis Joseph Bohl; Thomas Leo Caldroney; Michael Sarla.

Salem County

CARNEYS POINT—John H. E. Fust; Frank Ebaugh Mason; Rawley Watt Ward. ELMER—Marion Stanley Black; John Franklin Reeves. PENNS GROVE—George Lindsay Cook; Brooke Dodson; Samuel Raymond Fairchild. SALEM—David Wright Green; David W. Green; William Thomas Hilliard; Charles Everett MacDonald. WOODSTOWN—Claude Wellington Thomas.

Somerset County

BERNARDSVILLE—John Gordon Ross. FALL HILLS—Frank Longstreet Field. NESHANIC STATION—Walter Humstone Whiton. RARITAN—Warford Lash Nixon. SOMERVILLE—Lancelot Ely; Dr. Runkle Fisher Hegeman; Absalom Anderson Lawton.

Sussex County

BRANCHVILLE—Herbert Ewing Riddel. HAMBURG—Joseph Gilbert Coleman; Thomas Lawrence Pellett. NEWTON—Blase Cole. SPARTA—Albert Nicholas Jacob.

Union County

CRANFORD—Friend Bennett Gilpin. ELIZABETH—Edward Oscar Boller; Abijah Orange Buck; Philip D. Bunting; Julius Gerendasy; James S. Green; Carmine Rocco Marone; William Henry McCallion; Stephen T. Quinn; Charles Henry Schlichter; Frank Steinke. PLAINFIELD—Robert J. Childers; Harold D. Corbusier; Frank Wilbur Cornwell; George V. Genzmer; Edward Sheafe Krans; Thomas Murray Morris; Sydney Rose Titsworth. RAHWAY—Frederick William Sell. ROSELLE—Zadoc Lawrence Griesemer. SUMMIT—Carleton Bates; William Henry Lawrence Jr.; John Allen Thurston. WESTFIELD—Howard Fauntleroy Brock; William Wilson Sisserson.

PLAINFIELD—Jefferson Charles Anderson.

Warren County

OXFORD—Howard C. Millick. PHILLIPSBURG—James Monroe Torrence Jr.

NEW MEXICO MEDICAL SOCIETY

Officers 1917-18

John W. Kinsinger, President....:........................Roswell
Vice Presidents—
H. V. Fall..Roswell
C. A. Russell...Artesia
H. M. Cornell.......................................Las Cruces
R. E. McBride, Secretary............................Las Cruces
Frank E. Tull, Treasurer..........................Albuquerque

Councilors

San Juan, Rio Arriba, Taos, Colfax, Union, Mora, San Miguel, Santa Fe and McKinley counties. W. E. Kaser, Councilor, East Las Vegas.

Doña Ana, Luna, Grant, Sierra, Socorro, Valencia and Bernalillo counties. G. S. McLandress, Councilor, Albuquerque.

Chaves, Otero, Lincoln, Roosevelt, Torrance, Quay, Curry and Guadalupe counties. H. A. Miller, Councilor, Clovis.

HONOR ROLL

Bernalillo County

ALBUQUERQUE—Henry Rolf Brown; John Wilson Elder; Henry B. Kauffman; Robert C. Kirkwood; Ethan St. Clair Milford; David Cushman Twichell.

Chaves County

ROSWELL—Oliver Hugh Haymaker; Henry Allison Ingalls; John W. Kinsinger; William Clarence Matthews.

Colfax County

DAWSON—Frank Brady; Fred Barrett Evans. SPRINGER—Henry Hiram Panton.

Doña Ana County

LAS CRUCES—George Duling Carter; William Ewing Vandevere.

Eddy County

CARLSBAD—Mallory B. Culpepper; Louis H. Pate.

CARLSBAD—Joseph Warren Lackey.

Grant County

FT. BAYARD—Edward P. Rockwell. HANOVER—Calvin Wilson Davis: PINOS ALTOS—Lewis Burchfield Robinson. SILVER CITY—Earl S. Bullock; Ernset Allen Duncan; Samuel Holedger Eckles; Edward Waddell Hooper; Ignatz David Loewy; William MacLake; O. J. Westlake. TYRONE—Emmer Palmore Davis; Nathaniel Daniel Frazin.

NEW MEXICO

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Comm'd in M.R.C., etc.
Bernalillo	1,214	20.6	23,606	400	59	3	32	40	43	6
Chaves	9,408	254.3	16,850	455	37	1	12	28	23	4
Colfax	3,798	140.7	21,068	780	27	..	11	23	19	3
Curry	1,406	117.2	11,443	953	12	..	7	10	7	..
[1]De Baca	.....	.....	......	...	19	..	3	3	1	..
Dona Ana	3,821	201.1	15,567	819	19	..	7	14	9	2
Eddy	6,923	346.1	19,094	954	20	..	11	18	7	3
Grant	7,428	225.1	17,568	592	33	..	28	30	18	13
Gaudalupe	3,927	490.9	10,927	1,365	8	..	5	6	1	..
[1]Lea	.....	.....	......	.....	6	..	4	6	1	1
Lincoln	4,779	341.3	7,822	558	14	..	10	12	6	2
Luna	2,976	198.4	4,724	314	15	1	5	12	7	2
McKinley	5,506	275.3	12,963	648	20	1	10	19	12	4
Mora	2,571	257.1	14,295	1,429	10	..	10	9	6	1
Otero	6,689	514.5	8,731	671	13	1	8	12	5	2
Quay	2,905	217.6	14,912	1,065	14	..	13	13	4	..
Rio Arriba	5,871	533.7	16,624	1,511	11	..	10	10	5	2
Roosevelt	2,265	205.9	12,064	1,096	11	..	3	8	7	2
Sandoval	3.871	553.0	8,579	1,225	7	..	4	7	2	1
San Juan	5,476	547.6	8,504	850	10	..	5	8	..	1
San Miguel	4,798	239.9	23,570	1,178	20	..	10	14	13	1
Santa Fe	1,973	103.8	14,770	777	19	..	8	11	9	3
Sierra	3,118	1,559.0	3,811	1,905	2	..	1	1	1	..
Socorro	1,507	94.2	14,761	922	16	..	10	12	9	1
Taos	2,252	563.0	12,824	3,206	4	..	2	4	..	1
Torrance	3,369	421.1	10,119	1,264	8	1	5	7	..	..
Union	5,370	357.3	11,404	760	15	..	7	10	5	5
Valencia	5,639	808.4	13,320	1,902	7	..	1	7	4	..
Totals	108,940	238.9	349,920	767	456	8	242	363	224	60

1. County recently organized; area and population included with that of other counties.

Guadalupe County

SANTA ROSA—Silvius S. Craig.

Lea County

LOVINGTON—Herbert H. Gallatin.

Lincoln County

CAPITAN—Enoch Cyril Price. CARRIZOZO—Robert T. Lucas.

Luna County

DEMING—Samuel D. Swope; Earle LeGrand Ward.

McKinley County

CROWN POINT—Davis Herren. GALLUP—Dwight Allison; William Brackett Cantrell; Armstrong Cooper Pratt.

Mora County

MILLS—Orrille Bruce Moon.

Otero County

ALAMOGORDO—Jesse George Holmes. MESCALERO—John Richard Callaway.

Rio Arriba County

PARKVIEW—Harry Dickey Sewell; George Lewis Wyckoff.

Roosevelt County

ELIDA—Burris Barton McGee. PORTALES—John Lehr Reid.

Sandoval County

BERNALILLO—John Emery Hastings.

San Juan County

FARMINGTON—George Whittenhal Sammons.

San Miguel County

EAST LAS VEGAS—William P. Mills.

Santa Fé County

SANTA FÉ—Frank Joseph Erdlitz; Frank Eustace Mera. SPRINGER—Louis Floyd Murray.

Socorro County

RESERVE—Howe King Riddle.

Taos County

TAOS—Thomas Paul Martin.

Union County

CLAYTON—Denna Cree Daniel; Sidney Manson Edmondson; John Wesley Muir. DEDMAN—Anthony Ernest Lankford. DES MOINES—William Gilbert Bassett.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

Officers 1917-18

Alexander Lambert, President	New York
Thomas H. Halsted, First Vice President	Syracuse
Albert Warren Ferris, Second Vice President	Watkins
Marcus B. Heyman, Third Vice President	Wards Island
Floyd M. Crandall, Secretary	New York
Frank Van Fleet, Treasurer	New York

Councilor Districts and Officers

First District.—Dutchess, New York, Richmond, Orange, Rockland and Westchester counties.

Second District.—Kings, Queens-Nassau and Suffolk counties. Arthur H. Terry, Councilor, Patchogue.

Third District.—Albany, Greene, Rensselaer, Schoharie, Columbia, Sullivan and Ulster counties. James P. Marsh, Councilor, Troy.

Fourth District.—Clinton, Essex, Franklin, Fulton, Montgomery, St. Lawrence, Saratoga, Schenectady, Warren and Washington counties. Lew H. Finch, Councilor, Amsterdam.

Fifth District.—Herkimer, Jefferson, Lewis, Madison, Oneida, Onondaga and Oswego counties. James F. McCarr, Councilor, Watertown.

Sixth District.—Broome, Chenango, Cortland, Delaware, Chemung, Otsego, Schuyler, Steuben, Tioga and Tompkins counties. Arthur W. Booth, Councilor, Elmira.

Seventh District.—Cayuga, Livingston, Monroe, Ontario, Seneca, Wayne and Yates counties. W. Mortimer Brown, Councilor, Rochester.

Eighth District.—Allegany, Cattaraugus, Chautauqua, Erie, Genessee, Niagara, Orleans and Wyoming counties. Albert T. Lytle, Councilor, *Buffalo.*

NEW YORK

County	Area Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Comm'd in M.R.C., etc.
[1]Albany	527	....	187,258	684	273	6	167	210	212	83
Allegheny	1,047	17.4	41,412	690	60	1	22	29	42	10
[2]Broome	705	4.6	95,450	623	153	8	62	108	92	19
Cattaraugus	1,343	14.4	75,535	812	93	3	42	59	54	18
[3]Cayuga	703	7.1	70,261	706	99	8	27	64	65	9
[4]Chautauqua	1,069	7.1	121,570	805	151	2	57	93	102	22
[5]Chemung	407	4.4	60,786	660	92	7	41	61	56	13
Chenango	894	14.9	37,083	618	60	3	24	32	38	9
Clinton	1,019	19.8	48,815	921	53	..	22	35	38	7
Columbia	644	10.9	44,294	750	59	1	18	35	34	9
Cortland	503	11.2	30,469	677	45	..	12	23	37	3
Delaware	1,449	26.3	46,166	839	55	..	15	36	26	3
[6]Dutchess	806	5.3	95,904	626	153	11	81	100	106	25
[7]Erie	1,034	1.1	598,549	646	926	41	471	682	651	135
Essex	1,836	36.7	35,466	709	50	1	33	35	32	4
Franklin	1,678	26.6	47,808	758	63	1	39	46	42	7
Fulton	516	8.5	46,068	755	61	1	31	44	40	6
Genesee	496	10.3	41,963	874	48	3	22	31	37	6
Greene	643	17.9	30,214	839	36	..	18	21	23	3
Hamilton	1,700	242.8	4,539	648	7	1	5	5	3	..
Herkimer	1,459	16.4	67,260	755	89	4	42	63	59	11
[8]Jefferson	1,274	9.7	82,036	626	131	4	41	80	72	12
[9]Kings	70	0.03	1,798,513	762	2,260	98	1,294	1,912	904	372
Lewis	1,270	52.9	26,393	1,099	24	..	9	13	14	3
Livingston	631	8.9	38,752	545	71	6	28	32	50	9
Madison	650	11.0	42,729	724	59	1	15	37	36	10
[10]Monroe	663	1.3	339,157	654	518	30	270	382	351	83
[11]Montgomery	398	6.1	64,924	998	65	3	28	45	53	7
Nassau	274	2.1	130,196	993	131	7	70	97	73	17
New York	63	0.01	2,137,747	335	6,379	235	3,891	5,206	3,077	1,160
[13]Niagara	522	4.2	115,263	929	124	..	60	94	73	19
[14]Oneida	1,250	5.0	178,860	715	250	10	127	184	180	32
[15]Onondaga	781	1.9	228,307	546	418	18	176	301	228	41
Ontario	649	6.9	55,580	591	94	3	34	60	73	1
Orange	834	5.1	124,863	693	180	10	82	124	100	16
Orleans	396	9.6	34,698	846	41	2	14	22	27	4
Oswego	966	11.6	77,662	935	83	3	38	55	58	9
Otsego	1,009	12.4	49,069	605	81	1	24	50	47	8
Putnam	233	13.7	15,307	900	17	..	6	10	13	..
Queens	105	0.4	396,727	1,491	266	10	155	217	109	42
[16]Rensselaer	663	4.1	722,698	4,433	163	4	88	118	96	23
Richmond	48	0.4	98,634	921	107	5	70	90	59	26
Rockland	183	3.4	53,130	1,002	53	3	28	35	23	7
Saratoga	823	8.4	63,414	647	98	4	42	64	56	17
[17]Schenectady	206	6.9	123,355	4,111	30	..	85	113	110	29
Schoharie	647	17.0	23,855	627	38	1	13	22	20	5
Schuyler	336	13.4	14,004	560	25	..	10	14	18	3
Seneca	336	7.1	26,972	573	47	2	19	31	28	6
St. Lawrence	2,701	23.5	90,813	789	115	3	38	72	71	11
Steuben	1,401	11.5	83,755	686	122	5	48	75	82	13
Suffolk	924	5.5	109,682	656	167	11	37	124	108	24
Sullivan	1,002	21.8	39,970	868	46	2	30	36	21	2
Tioga	520	11.8	25,624	582	44	1	13	27	23	7
Tompkins	476	5.5	37,708	438	86	8	31	54	63	14
Ulster	1,140	12.0	94,212	991	95	3	32	56	63	7
Warren	879	12.8	33,887	555	61	2	25	45	35	7
Washington	837	15.8	49,349	931	53	..	19	31	40	6
Wayne	509	9.1	54,816	830	66	..	20	40	38	9
[18]Westchester	448	1.0	357,473	780	458	18	225	262	284	91
Wyoming	601	11.1	33,495	620	54	3	15	31	37	7
Yates	343	11.1	18,922	610	31	1	10	22	22	4
Totals	47,661	3.0	9,321,431	593	15,877	619	8,552	12,255	8,321	2,583

1. Includes Albany, population 111,077; physicians 249 [M.R.C. 68].
2. Includes [illegible] 5,791; physicians 107 [M.R.C. 14].
3. Includes [illegible] physicians 61 [M.R.C. 8].
4. Includes [illegible] ,415; physicians 48 [M.R.C. 7].
5. Includes Elmira, population 41,278; physicians 79 [M.R.C. 12].
6. Includes Poughkeepsie, population 34,656; physicians 74 [M.R.C. 17].
7. Includes Buffalo, population 475,781; physicians 857 [M.R.C. 123].
8. *Includes Watertown, population* 30,404; physicians 52 [M.R.C. 5].
9. Includes Brooklyn, population 2,330,183; physicians 2,358 [M.R.C. 372].
10. Includes Rochester, population 264,714; physicians 461 [M.R.C. 77].
11. Includes Amsterdam, population 38,043; physicians 39 [M.R.C. 4].
13. Includes Niagara Falls, population 47,058; physicians 49 [M.R.C. 10].
14. Includes Utica, population 89,272; physicians 150 [M.R.C. 14].
15. Includes Syracuse, population 158,514; physicians 336 [M.R.C. 35].
16. Includes Troy, population 78,094; physicians 116 [M.R.C. 21]
17. Includes Schenectady, population 103,774; physicians 124 [M.R.C. 23].
18. Includes Mt. Vernon, population 40,291; physicians 62 [M.R.C. 10], also New Rochelle, population 39,192; physicians 53 [M.R.C. 14], also Yonkers, population 103,066; physicians 105 [M.R.C. 21].

HONOR ROLL

Albany County

ALBANY—Stanley Earl Alderson; William Dewey Allen; Jas. M. Archibald; Milton Aronowitz; Chas. L. Bailey; John Charles Brown; Leroy Joseph Butler; Byron Edwin Chapman; Harold Duncan Cochrane;

Erastus Corning; Leon Chas. Cote; Frederick Joseph Cox; Joseph A. Cox; Stephen Horace Curtis.

Charles Edmund Davis; Louis Joseph De Russo; Arthur Maultby Dickinson; Thobald Frederick Doescher; Joseph Levi Donhauser; Malcol Douglas; Edwin Lyon Draper; Loyal Linsey Dunlop..

Lawrence Joseph Early; Arthur Wells Elting; Otto Alois Faust; Emanuel Martin Freund.

Louis H. Gaus; Wm. Edwin Gazeley; John Giffen; Lemuel Whittington Gorham; Clarence Flack Graham.

Philip C. Hacker; Paul Tompkins Harper; Harold Colvin Harlland; Clinton Benjamin Hawn; John Edward Heslin; William Patrick Howard.

Thomas W. Jenkins; Harry Vincent Judge; James Henry Keeling; Wm. Geo. Keens.

Joseph Aloysius Lanahan; Joseph S. Lawrence; Harry Judson Lipes; Howard Eaton Lomax.

Andrew MacFarlane; Robert A. MacTaggart; Clarence Edmonds Mullens; Joseph Patrick O'Brien.

George W. Papen Jr.; Harold Artemus Peck; Abraham Max Rabiner; George Bradford Randall; John Joseph Randall; Theodore D. Reed; Conrad Aloysius Rissberger.

Henry L. K. Shaw; Byron Gray Shults; John Archibald Smith; John Forrest Southwell.

H. K. Tebbutt Jr.; Ralph Waldo Turner; Edgar Albert Vander Veer; James Newell Vander Veer.

Howard Lull Van Winkle; William James Wansboro; Arthur Hastings Wheeler; Linsly Rudd Williams.

COHOES—Wallace Jos. E. Aubry; Joseph Charles Edward Daunais; Richard Patrick Doody; Raoul Albert Herbert; Aloysius Dewitt Maby; James Henry Mitchell Jr.; Leslie Boyd Seaport; Arthur Edgar Smith; Clarence Howarth White. DELMAR—Thomas Milton Holmes. GUILDERLAND CENTER—Frank Hazelett Hurst. RAVENA—James Edward Maloney. SOUTH BETHLEHEM—Frank A. Augur. WATERVLIET—Chas. Augustus Krauss. WEST ALBANY—Earl Wayne Wilkins.

Allegheny County

ALFRED—Emerson Winfred Ayars. BELMONT—Ralph Elmer Robinson. BOLIVAR—Laurence Hackett. CANASERAGE—Carl Geo. Schwan. CERES—Frederick John Pfisterer. CUBA—Theron Blain Bond. FRIENDSHIP—Harold MacMurray Johnson. RUSHFORD—Hanford Kendall Hardy. WELLSVILLE—Ray M. Eaton; Frederick Eugene McCarty.

Broome County

BINGHAMTON—Samuel M. Allerton; Carleton T. Bagley; Raymond Gernand Bell; Myer Sol. Bloom; John D. Bowen; John Groat Corson; Don M. Hooks; Harry Isaac Johnston; Ulysses Silver Kann; Sylvanus James Nunn; Frank W. Sears; Charles Anthony Squires. ENDICOTT—Dwight Guilford Dudley; James Santee McNett. JOHNSON CITY—John Walter Farrell. PORT DICKINSON—George Jesse Ganow. UNION—Ray Holly Humphrey.

BINGHAMPTON—Daniel C. O'Neil; Lester E. Sanford.

Cattaraugus County

ALLEGANY—Jay Gould. DELEVAN—Myron Everett Fisher. EAST RANDOLPH—James Edgar Crossman. GOWANDA—Herman Walter Johnson; Ira Warner Livermore; Frederick Perlee Schenkelberger. OLEAN—James Jay Clark; Clarence Albert Greenleaf; John Alexander Johnson Jr.; Raymond Bartlette Morris; Benjamin Van Campen. PERRYSBURG—Arthur Burt Graves. SALAMANCA—John Conrad Hoeffler; Charles Arthur Lawler; James Almon Taggert; George Beckwith Ubel.

ALLEGHENY—Eugene Daniel Quinlan.
OLEAN—Donald Angus MacDuffie.

Cayuga County

AUBURN—Francis Joseph Bennett; Eugene Napolean Boudreau; John Wordsworth Copeland; Raymond Fleming Johnson; Wm. Henry Kober Jr.; Rob Roy McCully; Forest Ray Mildren; Maxwell Kemper Willoughby. WEEDSPORT—Clinton Eddy Goodwin.

Chautauqua County

CASSADAGA—Henry Salem Edmunds. DUNKIRK—George R. Irving; Henry Jos. Meister; Norman Leo Sheene; Walter Hall Vosburg; John Charles Webster. FREDONIA—Roy John Juhre; Harry Elmer Wheelock. FREWSBURG—Francis John McCullo. JAMESTOWN—Frank Perry Goodwin; Floyd Warner Hayes; Walter G. Hayward; Edward Laban Hazeltine; Bergen Fred Illston; Milton John Johnson; William Miller Sill. KENNEDY—George William Batt. RIPLEY—Paul Sterrett Persons. SHERMAN—Guy Granger; Harold Elliott Shaver. WESTFIELD—Gunni Julius Busck; Roswell Fellows Foster.

Chemung County

ELMIRA—Floyd Pinckney Breese; Charles Hendry Erway; Arthur Clair Glover; Floyd Harding Jones; Louis Eugene McCanna; Edgar Warden Phillips; Stewart Stow Piper; Daniel Edgar Pugh; Arthur C. Smith; Donald Joseph Tillon; Raymond A. Turnbull; Bert Grant Voorhees. VAN ETTEN—Benjamin Franklin Colegrove.

Chenango County

GUILFORD—Blinn A. Buell. LINCKLAEN—Frederick Dudley Keppel. NORWICH—Edwin Fred Gibson; William Edward Hartigan. OXFORD—Burton Alexander Hall. SHERBURNE—Archibald K. Benedict. SMYRNA—Leroy Dilmore Soper. SOUTH OTSELIC—Jaynes Mott Crumb; Archibald Thomas Perkins.

Clinton County

DANNEMORA—Harold Russell Robert. PLATTSBURG—Wilmarth S. Buck; Le Roy Walter Hyde; Thomas A. Rogers; Ira Alonzo Rowlson; Willard Cornelius Thompson. STANDISH—Fred Vosburgh.

Columbia County

HUDSON—[illegible] Bradley; John Lounsbery Edwards; Henry [illegible] HOOK—Nathan David Garnsey. NEW LEB- [illegible] Brooks. OLD CHATHAM—Hamilton Munn [illegible] ohn Christian Knapp. STOTTVILLE—Jere- [illegible] Redmond Dimock.

Cortland County

CORTLAND—James J. Parsons; Daniel Robert Reilly. VIRGIL—John Harry Evans.

Delaware County

DELHI—Grover Asa Silliman. DOWNSVILLE—Fred De Grande Wilson. SIDNEY—Ralph Henry Loomis.

Dutchess County

BEACON—Leo Charles Dubois; Joseph Waldron Moore; George T. Polk; George Aaron Sharp. LAGRANGEVILLE—Ralph Grace. MILLBROOK—Vincent Valens McCabe. MILLERTON—Geo. Roger Dempsey. POUGHKEEPSIE—David T. Brewster Jr.; Grady Sebastian Clinkscales; Lawrence Edward Cotter; Charles D. Cromwell; St. Clair Terra Darden; Howard Wilcox Davis; Percy Loraine Dodge; James Taylor Harrington; Clyde Lipsey McNeil; Frederick Williams Parsons; Everett D. Plass; Arthur Grant Rodgers Jr.; Raymond Sanderson; Archibald Wilson Thomson; Lee Rose Tighe; Claude Evans Tubb; Sidney Chas. Vermilyea. STANFORDVILLE—John Newton Boyce.

WAPPINGER FALLS—Rowland Parker Blythe.

Erie County

BUFFALO—Francis Argus; Lloyd Kenneth Babcock; Antonio L. Barone; Peter Joseph Barone; Samuel Barone; Charles Joseph Barone; George Cosimo Barone; Herbert Henry Bauckus; Lynn Staley Beals; George Adam Becker; Edwin L. Beebee; Lawrence Melvin Belzer; A. L. Benedict; Maynard Gilmore Bensley; Joseph Barton Betts; Plynn Morton Bolton; Joseph Patrick Brennan; Jos. Brumberg; Patrick H. J. Buckley; Boleslaw M. Bukowski; Lorenzo Burrows Jr.

O. J. Case; Marshall Clinton; Julius Y. Cohen; Raymond Cleveland Conklin; George Ferdinand Cott; Harold Wm. Culbertson.

David M. Davis; Robert Edward DeCew; Richard Newnham DeNiord; Robert Paul Dobbie; Timothy Francis Donovan; Henry DeWitt Duryea.

Earl Leo Eaton; George J. Eckel; Albert Richard Ellison; John FitzGerald Fairbairn; Lee Francis Masten; Carl Grover Frost; Edward Lysander Frost.

Albert August Gartner; Harvey Russell Gaylord; George John Geisler; Milton Harry Goldberg; John C. Grabau; Irving Franklin Gram; Samuel Grienstein; John George Grotz.

Francis John Haley; George McK. Hall; Barton E. Hauenstein; Raymond Hensel; Wm. Oakley Hill; Robert W. Hinds.

Harold Bartlett Johnson; William Harry Jones; Daniel Jung; Russell Stewart Kidder; Robert King; Chas Gowen B. Klophel; Clarence Perry Kummer; Frank Kruse; Leon Sebastian Kurek.

Jos. Peter La Duca; Charles W. Lane; Sabrater C. Lojacono; Charles Edward Long; Frank Henry Long; Earl Henry Lormor; William Chisholm Lucas.

Walter Louis Machemer; Wallace F. MacNaughton; Baldwin Mann; Herman Frank May; William Lee McCanty; Arthur Everett McCarthy; Harold James McDonald; Hugh Chauncey McDowell; Descum Clayton McKenney; Michael James McMahon; Roland Otto Meisenbach; Edward Frederick Meister; John Anthony Metzen Jr.; Rudolph C. Miller; Vincent Chas. Moscato; Jerome Aloysius Murphy.

Joseph Aloysius Nowicki; Oscar J. Oberkircher; Geo. Melvin Oppermann; William Ostrow; Frederick Wm. Palmer; Charles C. Panzarella; Harold Alexander Patterson; William Ward Plummer; Frank Nelson Potts; Thomas H. Powick; Leon Hastings Prior.

Nelson Gorham Russell; Leo Marks Sachs; Arthur C. Schaefer; Charles Simon; Herbert Alexander Smith; Edward Archibald Southall; Frederick Edward Sperry; John Gurney Stowe; Fredk. Ettore Strozzi; Jas. Cornelius Sullivan.

Earl Wm. Thoma; Carl Tompkins; Haworth R. Traver; Alfred Herbert Vogt; Frank Gebhard Walz; John Henry Watson; Harry Milton Weed; Grover Wm. Wende; Carlton E. Wertz; Hiram Samuel Yellen. COLDEN—Warren Z. Dell. HAMBURG—Amos John Minkel. COLLINS—Herman Lester Raymond. LACKAWANNA—Harry Alexander Scott; Kenneth Allan Smith; Edward A. Twist. LANCASTER—Clarence Herbert Mackey. SPRINGVILLE — Gregory Everett Stanbro. TONAWANDA — Howard Cousins Fairbanks; Archibald William Thompson. WILLIAMSVILLE—Harry Bestow Huver.

BUFFALO—John Cunning Brady; Frederick William Filsinger; Urban Andrew Fischer; Harry Joseph Hammond; Thomas Henry McKee.

LACKAWANNA—Roy B. Woodward.

Essex County

AU SABLE FORKS—George Jacob Culver. KEESEVILLE—Frank M. Holcombe. PT. HENRY—Edward S. Smith. WESTPORT—John A. Battin.

Franklin County

BURKE—Frank Floyd Finney. CHATEAUGAY—Leonard Pearsons Sprague. MALONE—Benjamin Roy Allison. SARANAC LAKE—Edward Newman Packard Jr.; James Woods Price; Willard Burr Soper; Francis Berger Trudeau.

Fulton County

GLOVERSVILLE—Homer H. Oaksford; Charles E. E. Pannaci; Jos. Leo Ward; Harry Whitney Wheaton. JOHNSTOWN—Frank Mathias Neuendorf; Michael Edward Nolan.

Genesee County

BATAVIA—Anthony Joseph Greco; Clarence Bentley Gould; Ward Beecher Manchester; Elmer Elwell Owen; Henry Morris Spofford. BYRON—Edgar Bieber.

Greene County

CATSKILL—Charles Frederick Bove. URLTON—Stanley M. King. WEST COXSACKIE—James Israel Schoonmaker.

Herkimer County

DOLGEVILLE—Fred M. Barney. HERKIMER—Fredric Stephen Cole; Ralph Pyrne Huyck; Floyd Hazard Moore; Howard Casper Murray. ILION—William Knowlton Johnson; Lewis P. Jones; Morris Head Newton. LITTLE FALLS—John Daniel Miller. MOHAWK—Herbert Henry Williams. NEWPORT—Arthur Thomas Davis.

Jefferson County

ALEXANDRIA BAY—Louis John Hartman. CAPE VINCENT—Norman P. Bentley. CLAYTON—William James Ross. EVANS MILLS—Claude Erastus Chapin. LAFARGEVILLE—Arthur Lewis Tinkess. PHILADELPHIA—Roy Wesley Bury. WATERTOWN—Maurice Daniel Barnette; Harlow G. Farmer; Murray MacGregor Gardner; Jesse R. Pawling; Page Earl Thornhill.

Kings County

BROOKLYN—Stephen H. Ackerman Jr.; Harry Agris; Alexander L. Anderson; Robert Burns Anderson; Barnett Aronson; Gilbert Alonzo Ashmun.

Joseph Sylvester Baldwin; Robert F. Barber; Samuel P. Bartley; Joseph Lee Behan; Harold Kennedy Bell; H. Muhlenberg Bergamini; Edward Leo Berger; Louis Berlin; William Guy Berlucci; Benjamin Maurice Bernstein; James E. Bernstein; Phillip Frantz Bernstein; William Henry Best; Julius C. Bierwirth; Jas. Abruzzo Bilello; Murtha Paul Blaber; Howard Thos. Blair; Julius Martin Blank; Samuel Jos. Blumenthal; Julius B. Boehn; Robert Bogan; Henry Benjamine Boley; Valentine Vincent Bourke; Gustave August Broun; Everett Clifton Brennand; William B. Brinsmade; Bertram Porter Brown; Charles A. Brown; Francis Xavier Brown; Waldemar Theodore Browne; Joseph M. L. Bruno;

Hugh Max Bullard; Henry Alden Bunker; John Henry Burke; John Bernardino Byrne Jr.

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John Baptist *D'Albora*; *John F. Daly*; *Frederick Damrau*; Hyman Danish; Saml. Danzer; John E. Daugherty; Wilburt Cornell Davison; Prosper Hector Degregori; Beeckman J. Delatour; Henry Beeckman Delatour; Joseph Carlisle De Vries; Thurston H. Dexter; Alfredo *DeYcanna*; Savario DeYoanna; John Francis Dooling; James Francis *Dougherty*; Henry Cecil Drew; Herbert *Sperry DuCret*; Chester Ford Duryea.

Charles Eastmond; Adam Eberle; *Lowell Brown Eckerson*; Wilfrid *Vincent Egan*; Wm. Murray Ennis; *Irving Epstein*; *John Leonard Everlof*.

Peter Gracie Fagone; Henry Joseph Feaster; Henry M. Feinblatt; Laurant Gustave Feiner; *Harry Feldman*; A. Arthur Feller; Manning Cromwell Field; Richard Michell *Field*; *Carl O. Fischer*; Henry Andrew Fisher; Samuel Lloyd Fisher; *Edwin Howe Fiske*; *James Thomas Flanagan*; *William Gordon Flickinger*; *John Henry Flynn*; Merrill Newton *Foote*; Alexander McGowin Foshee; *Cecil Richard Frank*; George Freiman.

Ralph Howard Garlick; Gordon Gibson; *Donald Maurice Gildersleeve*; Chas. R. Gill; *Albert Edward Gilmartin*; William Schaffer Glenn Jr.; Louis Gold; Louis Goldfort; *Charles Goldman*; Samuel Goldman; Emanuel Goldstein; *Eugene H. Goodfellow*; *Anslow Allen Gordon Jr.*; *Abraham Louis Gottlieb*; Leon J. Grant; *Irving Gray*; Edward Everett Green; Isaac Ernest Greenberg; Lewis Grenberg; *Herman Grossman*.

Henry Harris Haft; Cornelius Edw. Hagan; James T. Hanan; Frank Harnden; *Harry Cleveland Harris*; Isadore Daniel Haskell; John Joseph Hauff; Charles Hunter Heacock; *Samuel Hecht*; *Otto Hugo Heffter*; Harry Howard Hemstreet; *George Edward Henderson*; Solomon Hendleman; Emilio Leopold Hergert; *Frank Richard Herrman*; William Gettier Herrman; *Alphonse Jos. L. Hertel*; Llewellyn Evans Hetrick; Jacob Ellis Hodes; *George Francis Hogan*; *Nelson Miles Holden*; John C. Holzberger Jr.; George Ralph Horton; Henry T. Hotchkiss; *Percy F. Houghton*; *Otto Von Huffman*.

Alfred Herbert Iaason; Benjamin Jablous; Leo Jacobs; Morris Jacoff; *Arthur R. Jarrett*; Kent Wood Jarvis; Francis Bates Jennings; *John Edward Jennings*; Everett Colgate Jessup.

Carl Kaplan; Joseph Dominic Kelly; Frank Henry Knight; Abraham Kogut; George Kornfeld; Morris Ted Koven; Geo. Samuel *Kramer*; *Samuel Kraushor*; *David Dudley Krupp*.

William Watson Laing; Herbert Leonard Langer; Irving David Laudeutscher; Carlton Anderson Lee; John A. Lee; Harry Michael Lefkowitsh; Philip Lehman; Leon Edward Lesser; Samuel *Kantor Levy*; Mortimer Harold Linden; John Lovejoy Linn; *Harry Lipston*; William *H. Lohman*; *John H. Long*; Jos. Francis Long; James Francis Xavier Looram; Joseph T. Loughlin; Thomas A. Lynch; John J. Lyons.

John C. MacEvitt; William Lawrence Madden; *Anthony Mangiaracino*; Frank Joseph Mangold; Albert Carlyle Margulies; Edward Hugh McCaf*frey*; Chas. Francis McCarty; Thos. H. McClintock; Walter Arlington McCullough; Geo. Gerard McElvare; Jos. Lee McGoldrick; Donald Esterbrook McKenna; Hector Jas. McNeile; Thos. Donald McRossie; *John Francis Wallace Meagher*; Henry E. Meleney; Albert A. Mendez; Max Mensch; Franklyn Herman Miller; Sutherland Miller; Walter Moehle; Cesare Mondini; William Moitrier; Francis W. Moore; Joseph L. Moore; Walter Van Olinda Moore; Henry Monroe Moses; Otto Lewis Mulot.

William Henry Nafis; Charles Dwight Napier; Abraham Nemser; Harold Nexson; Howard LeRoy Norton.

Arthur Jos. O'Connor; Charles George O'Connor; Karl Osterhaus; Sidney Douglas Palmer; Samuel Parness; Russell Cisney Parson; David Pashman; Harry Hopeman Patrie; Thomas Francis Patterson; Richard Sebastian Pearse; Samuel Perlman; Jacob John Pfeifer; William Gray Phillips Jr.; Arthur H. Pierson; James T. Pilcher; *Harry Plotz*; *George* A. Powers; Wm. Kent Pudney; Theo. Louis Pulvermacher.

John A. Quell; John Randolph Quinn; Benjamin Rabbiner; William Raim; Abraham Ravick; Harold Vincent Raycroft; Floyd Grendon Reed; Thomas Moreland Reid Jr.; George Ballantyn Reitz; *Richard Anthony* Rendich; Peter Augustus Reque; Max Resnicoff; Frank H. Richardson; Alfred A. Richman; Francis Bertrand Ring; Daniel Rutgers Robert; Dudley D. Roberts; Ransom S. Robertson; Hugh A. Rodden; Joseph Rosenfeld; Joseph Daniel Rosenthal; Herman Rubin; Jacques Rushmore; *Charles Evelyn Rynd*.

Edward *Aaron Saltzman*; Solomon Jos. Sambur; Geo. Frank Sammis; Moses Sandler; Ernest Herman Saniter; August Matern Sartorius; *Ernest Ludwig Schaefer*; *Henry* Louis Schel [illegible] Scher; Ernest [illegible] braham Schilling; Ivan Michael Schneible; Irving S [illegible] Frank Schultz; Robert H. Scott; Jacob Joseph [illegible] is Earl Seidensticker; Fedor Leo Senger; Isadore [illegible] Leonard Shapiro; Clayton Sharp; *Walter A. Sherwood*; Francis Milton Shockley; *Harold* William Shutter; *Ferdinand* Francis Siegel; Max Kaufman Silverman; Alexander Smith Sim; William Edward Skidmore; Arthur W. Slee; Henry B. Smith; James Washington Smith; Joseph Wheeler Smith Jr.; Henry Snow Jr.; Samuel Solovei; Jos. James Sorkin; Thomas Bray Spence; Edgar Spiegel; William H. Steers; Joseph Benjamin Stenbuck; *Milton Irving* Strahl; *Henry William Straus*; *Jos. Geo.* Strickler; Samuel Strumwasser; Raymond Peter Sullivan; Thos. Jos. Sullivan; Irving Emerson Sumner; Henry Alexander Sussman.

Robert Willis Tate; John Mortimer Taylor; Wm. Henry Taylor; *Hyman* Irving Teperson; Alec Nicol Thomson; Samuel Topkins; Harold Augustus Traynor; Hubert *King Turley*.

Herbert Moffit Vann; Franklin Brush Van Wart; Ernest *Marsters* Vaughan; John De Cesare Verilli; Archibald Albert Walker; John Woodward Walther; Joseph Francis Ward; Robert Grover Ward; Frederick Washnitser; James Watt; James Elwood Weatherford; Nathan Weinberg; Martin Weinberger; Bernath Weiss; Samuel Weiss; Thos. *Franklin Weldon*; Raeburn James Wharton; Byron Dyson White; Edward *L. Whittemore*; Arthur Wildman; Raphael Wolfe; William L. Wolfson; *Jay G.* Wood; Lucius Judson Woodworth; William C. Woolsey.

Charles Francis Yerdon; Frederic David *Zeman*; William Zuckerman; Samuel *Zwerling*.

BROOKLYN—Antonio Arbona; Robert Bailin; Leo Faske; William H. Field; Royale Hamilton Fowler; Meyer Grollman; Adolph Samuel Kramer; Anthony Wayne Martin Marino; Maurice Morrison; Frank Moskowitz; Charles Francis Nicol; Maurice Rosier; Aaron Roth; George W. Ruger; George Joseph Signorelli; William Sidney Smith; Joseph Tenopyr; Morris Weissberg; Leo Zimtbaum.

Lewis County

CROGHAN—Paul Henry Von Zierolshofen. LOWVILLE—Cyrus Whitney Culver. WEST LEYDEN—Charles Adelbert Perry.

Livingston County

AVON—Charles Guy Swan. DANSVILLE—Clark Vernon Fairbanks. GENESEO—Charles I. *Newton*. LIVONIA—Vernon Leslie Bishop. NUNDA—William Erwin Diefenbach. SONYEA—*Elias Cecil Fischbein*; Charles Aubrey Joy; James Frederick *Munson*. *YORK—Benj.* Harrison Dike.

Madison County

CANASTOTA—*Samuel T. Barton*; *Calvert Martin* Deforest; *Hermann* Gustav Germer; Earl Chester Holden. MADISON—Arthur Joseph Forward. ONEIDA—Robert Lewis *Crockett*; *Geo. Flamm*; George Francis Mills; Otto Pfaff. POOLVILLE—Clyde *Danford* Oatman.

Monroe County

FAIRPORT—*William Henry Ferrier*; George S. Price. HILTON—Walton Hovey. ROCHESTER—*Max* Alonzo Almy; Frank B. *Baldwin*; Leon James Barber; *Edmund C.* Boddy; Anthony Bondi; Charles O. Boswell; *John Ruskin Bradley*; *Raymond* John Brown.

Michael Lester Casey; Alfred F. Cassebeer; Milton Chapman; Leighton Randolph Cornman; Joseph *Richard Culkin*.

Sol *Charles Davidson*; *James Clement Davis*; *Michael Richard* De Vita; Raymond E. Elliott; William V. Ewers.

Ralph Roswell Fitch; *James Murray Flynn*; John Denison Fowler.

George H. Gage; *Frederick Joseph Garlick*; *George Washington Goler*; Philip Gordon; *Thomas John Goundry*; Corden Thorne Graham.

Edward L. Hanes; *Clayton Kendall Haskell*; Charles W. Hennington; Joseph P. Henry; Wallace Herriman; Charles L. Hincher; *James LeRoy* Hondorf; Charles W. Hoyt; Joseph Edward Hurley.

Edwin Stanley *Ingersoll*; William *B.* Jones; Albert D. Kaiser; Franklin Austin Knope.

Abraham Lebendig; Macy Levi Lerner; William Alexander Macpherson; Charles Maggio; Henry Elsner Marks; David Ralph Melen; Alvah Strong Miller; *Harry* Adelbert *Miller*; *Howard D. Mitchell*.

Lawrence James Nacey; *Francis J. O'Brien*; William K. Otis.

Myron *Botsford Palmer*; Paul Martin Parker; William W. Percy; Norman Jos. Pfaff.

Hiram Randall; *Arthur Patterson Reed*; *Ray D. Richman*; Francis John Robinson; Samuel Hendricks Rosenthal.

Jacob Sachs; Harry Allen Sadden; William Waldo Schairer; Benjamin James Slater; *Alexander Lorne Smith*; *Harold Launt St. John*; Charles Clyde Sutter; John M. Swan.

Julius *T.* Waterman; Edward Tubbs *Wentworth*; *William Richardson* Woodbury; Warren *Wooden*; *Harry Wooden*; *Harry Wronker*; *Chas. Carmelo Teresi*.

SULLIVAN—Elsworth Eliot.

WEBSTER—James Byron Foster; William Stanton.

ROCHESTER—John C. Dessloch; Frank Sackett Schonover, Jr.

Montgomery County

AMSTERDAM—Earl Cunningham *McCordy*; *Elmer H. Ormsby*; *Avery H. Sarno*; *William Henry Seward*. *FONDA*—Edward Johnson Abbott. FORT PLAIN—Walter *Clayton* Fox. FULTONVILLE—Stephen John *Henry Reed*.

Nassau County

BALDWIN—Luther Holden Kice. FLORAL PARK—*Thomas Franklin* Davies. GLEN COVE—Frederick *Bernstein*; *Harrison Greenleaf* Sloat. GREAT NECK—David Crawford Byrne Jr.; Alfred Harrison Parson. HEMPSTEAD—John Rutherford *Herrick*; *Herman C.* Russell; Herbert *de Grove Sherman*; *Harold* Askerman Storms. HICKSVILLE—Thomas Freundlich. *OYSTER BAY*—Rupert Vincent Gibbons. PLANDOME—Frederick Rodney Sanborn. ROCKVILLE CENTRE—Arthur Chalmers Martin. WESTBURY—George *Stephen* Silliman. WOODMERE—Edward Hamilton Pershing; *Edwin D.* Smith.

New York County

FORDHAM—Moody Warren *Arnold*. *BLACKWELL ISLAND—Charles* Elbridge Howe. NEW YORK CITY—Robert *Abbe*; *Theodore Jacob* Abbott; Frank Earl Adair; Leopold *Adams*; Herbert A. *Adler*; Fred H. Albee; Harry L. Alexander; Max Alexander; *James S. Allan*; *Jere Augustus* Allis; Louis M. Alofsin; Julius Elmer Alter; Emil *Altman*; *Alexander* Altschul; Harold L. Amoss; Warren E. Anderson; William *Dulaney* Anderson; Abraham Anesh; John Aquaro; Richard T. Atkins; Ralph Nordack Arnold; Morris Auslander; Dixon L. Austin; *Charles Auer*; Anthony Avata; William Lloyd Aycock; Edward L. *Ayme*; *Renato J.* Azzari.

Daniel Bacharach; George Baehr; Pearce Bailey; William Bainbridge; Valentine C. Baker; Harrie S. Baketel; Herman J. Ballen; Leon Banach; Garrett Nelson Bancker; Frederick W. Bancroft; Harold Barclay; J. C. Barker; *Percival M.* Barker; Cyril Barnert; Edmund J. Barnes; David Preswick Barr; Frederick James Barrett; Henry Smith Bartholomew; John N. Bassin; William Henry Baughman; Oscar Israel Baumann; Rex Warren Beard; Edwin Beer; Maurice B. Bender; Arthur Jerome Bendick; Edward L. Benjamin; Walter Bensel; Thomas *Fabian Berberovich*; Conrad Berens Jr.; James Michae [illegible] James Wallace Beveridge; Henry Lambert Bibby; Alfred [illegible] thur Binzman; Louis E. Bisch; Howes Bisho [illegible]; Constantine [illegible] Blake; George [illegible] Bierring; Donald Ra [illegible] arles D. Bles; [illegible] William Bla [illegible] Blue; Ephraim [illegible] *Raymond C* [illegible] Milton *Boden*heimer; [illegible] Aaron S. Bl [illegible] heimer; Joseph Bogan; John Joseph Boland; Herman J. Boldt; Louis A. Bonvincino; Lewis Samuel Booth; Maxwell Meyer Booxbaum; Kevork Norses Bostanian; David Boviaird; Jacob Bower; James *Raymond Boyd*; *Louis Franklin Boyd*; *Donald Edward* Brace; Edwin L. Brackney; Samuel Bradbury; John C. Bradner; Murray L. Brandt; Jacob Branower; *Robert* Emery Brennan; Charles Brewer; George E. Brewer; George F. Brewster; Harry Dwight Brewster; Walter M. Brickner; Thomas Francis Bridgman; Arthur Comstock Bright; Abraham Atlon Brill; Nathan Edwin Brill; Daniel *Bradley Brinsmade*; Benjamin Brod; Benjamin Brodie; William Charles Brons; Harlow Brooks; Morris Brooks; James Harvey *Brothers*; Douglas Brown; John Harris Brown; Samuel Brown; Everett Garnsey Brownell; Abram B. Bruner; William S. Bryant; James Lauderdale Bryson Jr.; Samuel Adolph Buchenholz; Robert E. Buckley; Kenneth *Buck*ley; Jacob Buckstein; Carroll Gideon Bull; Carl A. Burdick; *Sidney* Rogers Burnap; Athel Campbell Burnham; William A. Burns; *Jacob* Burstan; Archibald Henry Busby; Charles Terry Butler; William Edwin Butler.

Joseph Turner Cabaniss; Attilio M. Caccini; George Francis Cahill; Eugene Wilson Caldwell; *Alfred* Franklin Calvelli; Eugene Carelli; Charles *Nicoll Bancker Camac*; *Ernest A. Campbell*; James Alonzo Campbell; Royall Graves Cannaday; Robert Golden Carlin; Louis Carp; Eldridge Arthur Carpenter; Matthew L. Carr; John H. Carroll; John Dennis Carroll; William Edward Carroll; Robert Leon Carter; Edward G. Cary; Louis Casamajor; Stanmore Langford Cash; Henry Arthur Cassebeer; Michael Edward Cavallo; Charles E. Caverly Jr.; Russell L. Cecil; Louis Herbert Celler; Arthur Lloyd Chambers; Hugh Chaplin; Henry T. Chickering; George Arthur Clark; Arthur Hutchins Cilley; Abram S. Clark; George Arthur Clark; James B. Clark; Francis J. Clemenger; Mather Cleveland; Edward G. Clifton; James Livingston Cobb; Gerhard Hutchinson Cocks; Henry C. Coe; Frederick Huntington Coerr; Ira Cohen; Jacob Cohen; Alfred E. Cohn; Mark Cohn; Sidney Cohn; John William Colbert; Carter S. Cole; Lewis Gregory Cole; Edward Martin Colie; Howard Dennis Collins; Joseph Collins; Ralph Colp; Henry Taylee Compton; John Edward Conboy; Woodhull Lee Condict; Dudley Steel Conley; Karl Albert Connell; Edmund McCollam Connely; Lewis Atterbury Conner; Joseph Edward Connery; John Francis Connors; George Washington Conterno; Thomas Edwin Cooney; Stratford F. Corbett; Robert Adwood Corbin; James Griffin Corneille; Herbert Corda de Vilarrestau Cornwell; James Albert Corscaden; Edwin Gordon Cosby; Harry Austin Cossitt; Ralph Edward Costanzo; Gregory Joseph Costigan; Fritz Clarke Costen; John James Cotter; James F. Coughlan; Calvin Brewster Coulter; Cyrus Burns Craig; J. Kenneth Crandall; Stanley E. Crawford; Edward J. Cringle; Nathaniel Crost; Wilbur Fiske Crutchley; Robert Effinger Cumming; John Joseph Cunningham; William Francis Cunningham; John Francis Curtin; Edward Cussler; Condict Walker Cutler Jr.

Clarence Joseph D'Alton; Charles Goodliffe Darlington; Gustavus Cornelius Darlington; Thomas Darlington; William Darrach; Edward John Davin; Eugene Davis; Thomas George Davis; Hal McCluney Davison; Frederick Myers Dearborn; James Windsor Decker; Augustus Peter Dellett; Charles Kenneth Deming; Edward B. Dench; Wilfred Sidney Dennis; Bernard Solomon Denzer; Richard Derby; Adolph G. De Sanctis; George P. De Tuncq; Edmund Devol; Leon E. De Yoe; Frederick Henry Dieterich; Paul Albinus Dineen; Norman McLeod Dingman; Salvatore Di Palma; Hubert Carlyle Dixon; Alphonse Raymond Dochez; Raymond Canfield Dodd; Blake F. Donaldson; Joseph Edward Donnelly; William Guy *Doran*; *Alvah H. Doty*; Jay W. *Dounce*; Ralph Leo Dourmashkin; Charles N. Dowd; Heman Laurence Dowd; George Draper; John W. Draper; Eugene Du Bois; Guilford Swathel Dudley; Allison Harold Dugdale; Edward K. Dunham; Henry Sage Dunning; John Hughes Dunnington; James G. Dunseith; John F. Dunseith; Howard Barham DuPuy; Herbert Alton Durham; Kirby Dwight; Fred Ward Eastman; Earl Henry Eaton; Frederick John Echeverria; Meyer M. Eckert; Leo Edelman; Ammi Ballinger Edgar; William Murray Edmonds; Walter Davis Edwards; Louis John Robert Effler; Carl Frederick Eggers; Edward Percy Eglee; Max Einhorn; Moses Nathaniel Elsner; Russell D. Elliott; Thomas Frederick Ellis; William James Elser; Hermann Elwyn; Haven Emerson; Herbert Waldo Emsheimer; William Engel; Joseph Engel Engelson; Robert Engl; Richard Bilderback Ernest Jr.; James Pendleton Erskine; Oscar Samuel Essenson; Beverly Van Warren Estill; Jesse Ettelson; Archibald Evans; Sumner Everingham; Maurice Exiner.

James Louis Fagan; Henry Charles Falk; Constantine Phillips Fallar; Robert Spencer Familton; Warren Conrad Fargo; David L. Farley; Waldo Peattie Farnum; Richard Sumner Farr; John Raymond Farrell; Jacob Nathaniel Feinberg; Moses Murray Feinberg; Joseph Felsen; Albert Barnett Ferguson; Paul Williams Fetzer; Silas Lorenzo Filkins; James F. Finnegan; Maximillian Charles Fischman; Harry Hyman Fisher; James Porter Fiske; William Edward Fitch; Reginald Fitz; *Albion J. Fitzgerald*; James Joseph Fitzgerald; James Patrick Fitzgerald; Charles Borromer Fitzpatrick; Robert Flanders; Mark Lance Fleming; Simon Flexner; Edward Paul Flood; Rolfe Floyd; Edward Foote; William M. Ford; Henry Hall Forbes; John Brooks Foster; Edmund P. Fowler; Robert Henry Fowler; John Winston Fowlkes; Howard Fox; Robert Tilden Frank; Spencer Franklin; John Frank Fraser; *Nelson Robert* Frasier; Frederick Clarence Freed; Moses Freiberger; Harold Herman Freund; Maxmillian Frick; Harry Fried; Simon Sydney Friedman; William Friedman; Claude A. Frink; Morris Louis Fuchs; Eugene Fuller; Richard Roy Trumbull Furlong.

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Lipman Miller Kahn; Morris Hirsch Kahn; Samuel Kahn; Frederic Kammerer; Arthur M. Kane; Harry E. Kaplan; Abraham Kardiner; Norris Jacob Karpas; Harry Katz; Henry Katz; John J. H. Keating; Frederick Conrad Keller; William Alvan Kellogg; Robert Hayward Kennedy; John Stanley Kenney; James Manning Kent; John Michael Keyes; Edward F. Kilbane; Cleveland C. Kimball; Edward Ambrose King; Frank Albert King; Joseph Eggleston Johnston King; Jerome Kingsbury; Ralph Aloysius Kinsella, Thomas Joseph Kirwin; George F. Klemann; Benjamin Schoenbrun Kline; Robert Phineas Knapp; Sig. Adolphus Knopf; George August Koening; Jerome Ludwig Kohn; Samuel Joseph Kopetsky; Philip Korn; Warren Post Kortright; Arthur Furman Kraetzer; David Kramer; Walter Max Kraus; Geza Kremer; David Edward Kronman; Ernest Frederick Krug; Isidor Harry Kugel; Barney Maurice Kully; Monroe Bradford Kunstler; Moses Kupperman; Henry Robert Kutil.

Anthony Lacovara; William Sargent Ladd; Louis Julius Ladinski; Alexander Lambert; Robert A. Lambert; Herman Ferdinand Lampe; Thomas F. Lancer; Joseph Aaron Landy; Edward A. Lane; Morton Paul Lane; Charles Lewis Larkin; Oswald N. La Rotonda; Nils P. Larsen; Henry M. Larson; Willis W. Lasher; Berton Lattin; Thomas Eugene Lavelle; Frederick Manwaring Law; James Herbert Lawson; Joseph Arthur Lazarus; Isadore Maurice Leavy; Burton James Lee; Edward Wallace Lee; George Bolling Lee; John Carey Lee; Maurice Lenz; Joseph Leo; Veader Newton Leonard; Henry Rothschild Lesser; Sidney Philip Levey; Herman Levison; Max Abraham Levy; Ralph J. Levy; Robert Louis Levy; Leon Theodore Le Wald; Frank Waring Lewis Jr.; John Francis Lewis; Milton Smith Lewis; Howard Lilienthal; Asa Liggett Lincoln; Joseph Morris Linett; Joseph Lintz; Walter Maynard Lippincott; Philip Joseph Lipsett; I. Edward Liss; Henry William Lloyd; Samuel Lloyd; Moses Lobsenz; Harry Loeb; Raymond Force Longacre; Warfield T. Longcope; Edward Julius Lorenze Jr.; David Lotringer; Young Cleveland Lott; John J. Loughlin; Frederic William Loughran; Robert L. Loughran; Alfred Isadore Lowenthal; Thomas Claude Lowry; Thomas John Luby; William Henry Luckett; Abraham Lustgarden; Charles Lutz; Henry Hamilton Moore Lyle; Daniel Bernard Lynch; James Augustus Lynch; Jerome M. Lynch; Michael J. Lynch; Charles Willard Lynn; Edward Crane Lyon; John D. Lyttle.

John T. McCurdy; Joseph McDonald Jr.; Constantine J. MacGuire Jr.; John A. MacIsaac; George MacKenzie; Walter Fullarton Macklin; Robert Cooley Maddox; John S. Maeder; Thomas Francis Maher; Hugh William Mahon; Andrew Walter Mahoney; Adfur Eddy Maines; Alfred L. Malabre; Edward R. Maloney; Stuart Ellsworth Mandeville; Louis Theodore Mann; Gustave Randolph Manning; Abraham Louis Margolies; Thomas Meriwether Marks; Arthur Harold Martin; Louis Goodman Martin; Thomas Aloysius Martin; Herman Martinson; Philip Marvel Jr.; Frederick R. Mason; Maurice S. Mathis; David Matus; George F. Maurier; Wm. R. May; Kenneth R. McAlpin; Malcomb McBurney; John Aloysius McCafferty; William Sharp McCann; Thomas Cresap McCoy; John Alexander McCreery; William P. McCrossin Jr.; Samuel McCullagh; Robert Francis McDonald; James Henry McDuffie Jr.; Charles Louis McEvecty; Joseph L. McEvitt; Laurence D. McEvoy; William Landram McFarland; Peter Paul McGlade; John Francis McGovern Jr.; Junius Hardin McHenry; Rustin McIntosh; Clarence S. McKee; James F. McKernon; William C. McKnight; Frank McLean; Franklin Chalmers McLean; Marion Blaisdell McMillan; George Palmer McNeill Jr.; Donald Thomas McPhail; George W. McSweeney; Jerome Augustine McSweeney; Clarence A. McWilliams.

Theodore F. Mead; Fred Marlin Meader; John Ignatius Meagher; Gaetano Joseph Mecca; Harold D. Meeker; Harold Lee Meirhof; Frank Lemont Meleney; Samuel James Meltzer; Simon Mencher; Alfred Meyer; Leo Bernard Meyer; Monro A. Meyer; Willy Meyer; Saul Lawrence Meylackson; Leo Michaels; Otis Charles Michie; Seth Herbert Miles; Hudson Russell Miller; Julius Asher Miller; Milton Alexander Miller; Louis David Minsk; Charles B. J. Mittelstaedt; Edmund Christopher Mohr; Walter C. Montgomery; Claude Moore; John J. Moorhead; William A. Morgan; Aaron M. Morgenlander; Rufus Ayers Morison; Benjamin Francis Morowitz; Myron Louis Morris; Robert T. Morris; Frederick Holton Morrison; Albert Sidney Morrow; Sterne Morse; Harry Thomas Morton; John Jamieson Morton Jr.; Alexis V. Moschcowitz; Aloysius M. Mulholland; Albert Thomas Murphy; James Bumgardner Murphy; James D. Murphy; William Alexander Murphy; Alonzo Harrison Myers; Mervin C. Myerson; Magnus Jacob Myres.

James Franklin Nagle; Louis Herman Nahum; Charles Halpin Nammack; David Morris Natanson; Lewis Knode Neff; Ray Sextus Nelson; Maxmilian Mark Nemser; Harold Neuhof; David Newman; Thomas C. Newsom; Silvanus Blanchard Newton; Alexander Nicoll; William P. Nicolson Jr.; George Henry Noble Jr.; Benjamin Nochilla; Joseph Emerson Noll; George E. G. Norton.

William Henry Joseph O'Brien; Sylvester Francis O'Day; Edward E. O'Donnell; Charles Townsed Olcott; George Potts Olcott Jr.; Peter Kosciusko Olitsky; Jean Redman Oliver; Walter Wayland Oliver; John Charles *O'Neill*; *Owen Roe O'Neill*; Bernard Sutro Oppenheimer; Edgar Davidson Oppenheimer; Russell Henry Oppenheimer; William Herbert Ordway Jr.; Abe Orenstein; Manus Emmanuel Ornstein; Robert E. O'Rourke; Alfred Frank Orth; Rudolph Daniel Orth; Lawrence Joseph Osborne; Gilbert S. Osincup; Herman Ostrowsky; Harold Francis Owens.

George Delmont Pace; Royce Paddock; Samuel Paleg; Anthony M. Palermo; Conde de Saleg Pallen; Walter Walker Palmer; Harold Ensign Bennett Pardee; Irving Hotchkiss Pardee; William Barclay Parsons Jr.; Henry Salem Pascal; Vincenzo Pascale; Jehiel H. Patrick; Paul Meyer Patterson; George F. Patton; Marshall C. Pease Jr.; Charles Howard Peck; James Pederson; Edward W. Peet; Thomas Christian Peightal; Emil John Pellini; Russell Pemberton; John Punnett Peters Jr.; Abraham Benjamin Pemsler; Gouverneur Morris Phelps; Carlin Philips; Herman Byrol Philips; Bruce Grotton Phillips; Charles Phillips; Otto Carl Pickhardt; Julius Pincus; Edward W. Pinkham; Irving Jonas Pinkus; Milton Woolley Platt; Daniel Poll; Sigmund Pollitzer; Louis Polon; Maurice Moses Pomeranz; Eugene Hillhouse Pool; Walter G. H. Pott; Robert Earl Pound; Thomas Iliff Price; Edgar Bacon Prout; Harry L. Purdy; Edwin Pyle.

Arthur Gardner Quinn; Morris Jacob Radin; John B. Rae; George Herbert Ramsey; Maurice Rashbaum; Percy Scott Rawls; Albert Amis Rayle; Mortimer Williams Raynor; William I. Reardon; Laurance David Redway; Linn Vander Hyden Reed; Theodore Byington Reed; Arthur Mitchell Reich; Ralph David Reid; Isaac Reitzfeld; Aloysius E. C. Renner; Jacob Resnik; Robert P. Reymond; Wythe Munford Rhett; George Kremer Rhodes; Arthur Curtis Richards; George M. Richards; Orville Heber Richer; Sidney Loeb Rieser; Edward John Riley; Henry A. Riley; Hugh Augustine Riley; Frederick G. Ritchie; Charles Peter Roach; John Hourne Robertson; Oswald Hope Robertson; Bernard Leo Robins; Lewis Byrne Robinson; Edward Lewis Rochfort; John William Rock; Samuel William Rock; William Hayden Rockwell; Lester Brooks Rogers; Lester

Laurens Roos; Samuel Solomon Rosenfeld; Samuel Victor Rosenkranz; Benjamin Rosenthal; Nathan Rosenthal; Harold Lane Ross; Samuel Roth; Marcus Adolphus Rothschild; Max Ira Roven; Fred Rovitti; Rodney Wallace Rowell; Jay Besson Rudolphy; James Isaac Russell; Worthington Russell; William Butler Ryan Jr.

Louis Bertram Sachs; Lucius A. Salisbury; Thomas William Salmon; Alfred Victor Salomon; Emanuel Salwen; Roy Osborne Sample; Edwin Field Sampson; Theodore Michael Sanders; Charles Henry Sanford; Waldo Henry Sanford; Louis Frederick Sanmann; Henry Suydam Satterlee; Harry Clayton Saunders; Royal Albert Schaaf; Frederick William Schaeffer; Milton Schaie; Samuel William Schapira; Joseph Schapiro; George William Schenck; Henry Morris Scheer; Nathan Samuel Schiff; Henry William Schlesinger; Robert Clinton Schleussner; Harry Christian Schmeisser; Henry Keller Schneider; Albert John Scholl Jr.; Frederick Christian Schreiber; Max Schroeder; Daniel Schultheis; Harry C. W. Schultz-de-Brun; Ernest C. Schultze; Alfred Alexander Schwartz; Otto Maximillian Schwerdtfeger; William Joseph Scott; William Alfred Scruton; Charles Fleet Scudder; Galen Fisher Scudder; Isadore Seff; Robert E. Seibels; Harry Joseph Seiff; Jerome Selinger; John Louis Sengstack; Arnold Shamaskin; Robert Shapiro; Herman Sharlitt; Hord Sharp; Frank Alexander Sharp; Howard Francis Shattuck; Andrew Francis Shea; Robert Joseph Shea; George Sheinberg; Joseph Morton Sheridan; Gerald Spencer Shibley; Francis W. Shine; George Marsden Shipton; George Wynn Shirk; Solomon Shlimbum; Montgomery Sicard; Hugo August Siebeneichen; Lewis Siegal; Henry Burr Siglar; Morris Kaufman Silberman; Samuel Silbert; William Henry Silverstein; Daniel Alison Sinclair; Donald Bunker Sinclair; Robert C. Simpson; Irvin Edward Siris; Samuel George Sisskind; Henry Robertson Skeel; James R. Skeoch; Abraham Skversky; William P. Smale; Edward Michael Smith; Elmer William Smith; Goodrich Truman Smith; Groves Blake Smith; James Vincent Smith; John Smith Jr.; Martin Def. Smith; Morris K. Smith; Thayer Adams Smith; William Lent Sneed; Louis James Sokol; Thomas A. D. Somers; William Andrew Somerville; Harry David Sonnenshein; Sidney Lehman Spiegelberg; Edwin Albert Spies; Edward Anthony Spitzka; Raymond John Sprowl; John Bentley Squier; Armin V. St. George; Fordyce Barker St. John; William Patrick St. Lawrence; Hendrik Van Renken Stam; *Rowland Pendleton Stanley; Irving Samuel* Startz; Kyle Baer Steele; Porter Aaron Steele; Louis Robert Steibel; Jacob J. Steinfelder; William Steinhauser; Reuben Steinholz; Richmond Stephens; Emanuel Stern; Edwin Sternberger; De Witt Stetten; Albert M. Stevens; Alexander Raymond Stevens; Neil Campbell Stevens; Ralph Alexander Stewart; William Holmes Stewart; Walter Francis Stillger; Alfred Stillman; Edgar Stillman; Ralph Griffiths Stillman; Philip Moen Stimson; Harry Russell Stone; Arthur Purdy Stout; David Dudley Stowell; Maurice Jacob Strauss; Simon Strauss; Spencer G. Strauss; Charles William Strobell; Samuel M. Strong; Charles William Strowger; Joseph Subkis; Arthur Bernard Sullivan; Edmund Bernard Sullivan; James F. Sullivan; Timothy Francis Xavier Sullivan; Edward Harrison Sutliff; Michael John Sweeney; William Patrick Sweeney; Theodore Higgins Sweetser; Homer Fordyce Swift.

Louis Harry Taft; Frank Tannenbaum; Archibald William Taves; Fenton Taylor; Herbert Douglas Taylor; Melvin James Taylor; John Hamilton Telfair; William S. Terriberry; Arthur Hutchinson Terry Jr.; Henry Clarke Thacher; Clarence Proctor Thomas; Henry M. Thomas; West Carstephen Thomas; William S. Thomas; Wilcox George Thorne; Josiah Payne Thornley; Michael Joseph Thornton; Benjamin Trowbridge Tilton; Alexander Berthold Timm; Norman Edwin Titus; Jacob Toporoff; Clarence Eneas Toshack; Jay Lester Touchstone; Sidney Trattner; James F. Trimble; Samuel Tripler; Edward Emory Tull; Fenton Benedict Turck; Philip Layton Turner; Reeve Turner; Percy R. Turnure; Carl Vann Tyner; Cornelius John Tyson.

Jacques Stanley Uhr; Abraham Unger; Arthur Wayne Uran; Jacob Urdang.

Albert Valensi; Julius John Valentine; Frederick T. Van Buren Jr.; Benjamin Morgan Vance; Albert Vander Veer Jr.; Earl Edward Vanderwerker; Benjamin Ford Van Duzee; Philip Van Ingen; Euen Van Kleeck; Allen Edward Van Ness; Cornelius D. Van Wagenen; Harry H. Varner; Richard Vaughn; Charles Vejvoda; Herbert Noble Vermilye; Philip John Vetter Jr.; Leonard Marshall Vincent; Ralph M. Vincent; John Elmer Virden; Karl Max Vogel; *Maxwell Lewis Volk; Victor Conrad von Unruh*; James Ditmars Voorhees; Arthur Seymour Vosburg.

Robert P. Wadhams; Jerome Wagner; Alex S. Walker; John Baldwin
Walker; George Barclay Wallace; Kenneth B. Wallace; Joseph Irving
Wallach; Kaufman Wallach; Robert Emmet Walsh; William J.
Walsh; George Walter; Milton Raphael Walter; Mark Hopkins
Ward; Drew Mallon Wardner; Edward J. Ware; Edward Richmond
Ware; John William Warner; Mortimer Warren; Jacob Washton;
Harvey Middleton Watkins; John Thomas Watkins Jr.; Francis
Elwood Weatherby; Roscoe Clayton Webb; Charles Edward Stu-
art Webster; Webb William Weeks; Benjamin Francis Weems; Elmer
Peter Weigel; Adolph Abraham Weiss; Jacob Joseph Weiss; Vincent
William Weiss; Samuel Frederick Weitzner; Fred Strouble Westmoreland;
Albert T. Weston; George Whiting Wheeler; Rae Wyant Whidden; Allen
Oldfather Whipple; Brainerd Hunt Whitbeck; Francis William White;
Park J. White Jr.; William Beverly White; William Crawford
White; Armitage Whitman; *Chester Field Smith* Whitney; Reynold
Webb Wilcox; Charles Mallory Williams; Percy Herbert Wil-
liams; Alexander Hamilton Williamson; Charles Edward Wills;
Brickhouse Wilson; Edwin Barrett Wilson; Frederick W. Wilson;
Harvey Hall Wilson; Hudson Jennings Wilson; Ross Miller Wil-
son; Isaac Max Wilzin; *Morris Winard*; Asher Winkelstein; David Henry
Winternitz; William Daniel Witherbee; Samuel Edward Witt; Charles
Wolf; Gessel Wolf; Solon Charles Wolff; William Baxter Ward; Wilson
Guyon Wood; Wiley Egan Woodbury; George Woolsey; James N. Worces-
ter; Arthur Nullin Wright; George Louis Wurtzel; John Henry Wyckoff.

Sidney Yankauer; Joseph Grant Yocum; Frank *Glynn* Young; John
Joseph Young; Edwin Garvin Zabriskie; Harry Oscar Zamkin; Abraham
Zingher; Philip Richard Zinn; *Hans Zinsseer*; Samuel Zuckerman; Gustav
Walter Zulauf.

*NEW YORK CITY—Ray H. Bechtell; Burnett B. Benson; William
Campbell Buntin; Mark Cohn; Samuel Sidney Fern; Guy Fish; James
Frederic Gillette; Harry Joseph Handelman; William Monroe Handle-
man; Hyman Hershberg; Charles Elbridge Howe; John Leonard Kan-
tor; Julius Kaufman; Oscar Wentworth King; Paul Ely McChesney;
Alexander Milcou Jr.; John Harold Morris; Arthur Palmer; Walter
G. H. Pott; Joseph Price; Francis Allen Richardson; Crea Roane
Sexton; Abraham Shorr; Herman Smith; William Christopher Stadie;
Max E. Stern; Norman Henry Taylor; James Dowling Trask Jr.;
David Tropauer; Euen Van Kleeck; Wiley E. Woodbury; Charles H.
Young.*

RIVERDALE—Augustus Bertram Dykman; Ewing Taylor.

Niagara County

JOHNSON CREEK—Murray F. Mudge. LOCKPORT—Lemuel Rankins
Hurlbut; Henry Hamilton Mayne; Frank Austin Walder; Lyman Hall
Wheeler. NEWFANE—Edwin Shoemaker. NIAGARA FALLS—Raymond Samuel Barry; John Lewis Bishop; Charles C. Childs; Edward Eugene Gillick; Howard Joseph Hutter; Frederick N. C. Jerauld; Robert J. Lawler; Ernest Martin Guido-Rieger; John Preston Sharp; Francis Joseph Talbot. NORTH TONAWANDA—Harry Oren Maldiner; Martin Francis Nolan. YOUNGSTOWN—Lewis William Falkner.

Oneida County

CAMDEN—George Canfield Lyons. CLARK MILLS—Fred Goodwin Jones. CLINTON—Roy Bicknell Dudley; Varney Bernard Hamlin; Erwin G. MacFarland. NEW YORK MILLS—Henry Miller Mitchell. ORISKANY FALLS—Robert Bruce Wilson. ROME—William Lester Grogan Roy Jay Marshall; Maxwell Comrie Montgomery; William Bradley Reid Le Claré Stuart; Kent Eugene Williams. UTICA—Charles H. Baldwin George B. Campbell; Francis Temple Chase; Jason Henry Conger; Frederick Christopher Devendorf; Arthur Rogers Grant; Miles Wendel Johns John Joseph Leary; Harold Cleveland Lyman; Stephen A. Mahady Nicholas Alfred Sullo; Robert Francis Zimmerman. VERNON—John Dean Shipman. WATERVILLE—Lewis Furbeck Cole; Edward Gove Randall; Howard David MacFarland.

UTICA—John Richard Fischer; Frederick Thomas Owens.

Onondaga County

CAMILLUS—George Hamell Shaw. JORDAN—Walter W. Osgood MANLIUS—R. M. Ballantyne. MOTTVILLE—Milton Edward Gregg. POMPEY—Frederick Austin Hunt. SYRACUSE—Adelbert Cleveland Abbott; William Dewey Alsever; Archer D. Babcock; Clyde O. Barney; Arthur W. Brennan; George Sidney Britten.

Murray A. Cain; Donald Smythe Childs; Clarence E. Coon; John James *Corbett.*

Raymond John Devine; Brewster Clarke Doust; Henry Burton Doust.

Scott Romain Fisher; Albert Alton Getman; Herbert Gifford.

Lee Arthur Hadley; Herbert Israel Kallet; Jefferson B. Latta; Glendon Richard Lewis; Daniel F. Luby.

Henry Alexander MacGruer; Brooks Walton McCuen; Arthur Dubois Meyers; Bernard Stanislaus Moore; Leonard Stevens Nolan.

Philip Sheridan Potter; Robert Case Scott; Myles Bernard Sharkey; George Kellogg Smith; Samuel Stewart; Earl Vincent Sweet; William E. Truax.

Edward Seguin Van Duyn; Earle Cyrenius Winsor; Edward Judson Wynkoop.

Ontario County

CANANDAIGUA—Alfred W. Armstrong; Frederick Coe McClellan. CLIFTON SPRINGS—Samuel Darragh Earhart; Samuel Timothy Nicholson Jr.; Walter Stevens Thomas; Walter Longfellow Weeden; John Alexander Wentworth. GENEVA—James Stevenson Allen; Isaac Williams Brewer; Thomas W. Maloney; Frank Hassan Snyder. GORHAM—Lloyd Frederick Allen. SHORTSVILLE—Daniel Alverson Eiseline. STANLEY—Charles W. Selover.

GENEVA—Thomas William Maloney.

Orange County

CORNWALL—Rufus Barker Crain. FLORIDA—Charles Willis Many. HIGHLAND FALLS—Thomas Daniel McMenamin. MIDDLETOWN—Floyd H. Cook; James C. Donovan; Arthur Selwyn Moore; Edwin Maurice *Schültze; Moses A. Stivers; Samuel L. Truex.* NEWBURGH—Charles Bailey Reed. PORT JERVIS—Lester Howard McAllister. TUXEDO PARK—Harold Fleming Morrison. WARWICK—Maurice Renfrew Bradner; Bernard McDowell Krug; Stephen Warner Perry. WEST POINT—Kenneth Allen Phelps.

Orleans County

ALBION—Ralph Earle Brodie; James Arthur Elson. HOLLEY—Clarence C. Nesbitt. MEDINA—Arthur Sharpe Bugbee.

Oswego County

FULTON—Frank Edward Fox. OSWEGO—Harvey S. Albertson; Charles Alexander Galisch; Edward Dowdle; Grover C. Elder; William John Galvin. PARISH—Stanley Stuart Ingalls. *PULASKI—Fred Lester* Ritter. RICHLAND—Alva Garfield Dunbar.

Otsego County

COOPERSTOWN—Floyd Jerome Atwell; Joseph Brown Cooke. ONEONTA—George W. Augustine; Arthur Ward Cutler; William Gilford Dickinson. OTEGO—Willis S. Cooke. UNADILLA—Whitney Hotaling Joyce. WORCHESTER—*Lewell T. Genung.*

Queens County

BAYSIDE—Harris A. Houghton. COLLEGE POINT—Harry M. Biffar; Walter Carl August Steffen; Robert V. Williams. DOUGLASTON—Nathaniel Perkins Breed. ELMHURST—J. de Raismee Combs; Leonard Knight Graves; Henry C. Mahnken; Thomas P. McCann; Joseph Lawrence Morrissey.

FAR ROCKAWAY—Abram S. Tepper. FLUSHING—John Auer; Louis
Nathaniel Gallego; Harvey Columbus Hardegree; George J. J. Lawrence;
Johnston Macleod; James Michael O'Neill; Daniel Joseph Swan. FOREST
HILLS—Frederick B. Humphreys; Edward Louthborough Keyes Jr.; Ward
J. MacNeal. FORT TOTTEN—Floyd William Hunter. JAMAICA—John
Joseph Kilcourse; William Lieberman; Gonzalo O'Neill. KEW GARDENS
—Harold Ellsworth Smith. LONG ISLAND CITY—Andrew John Ander-
son; Carl Boettiger; Harry Stark Fincke; Harry Goldman; Harry Philip
Mencken; Jacob Daniel Rosenman; Michael Myron Schultz; Ignatius
Max Sonkin; Louis Stein.

RICHMOND HILL—Russell J. McCraw; Edmund Henry Parizot.
ROCKAWAY BEACH—Daniel Ralph Lucas. WOODHAVEN—Edward
Dale Fraser; John Peter Schneble.

Rensselaer County

CASLETON—Garret Warren Timmers. HOOSICK FALLS—William
Alfred Ackroyd; Francis Joseph Cahill; Thomas
Andrew McGrath; Ira Condict Whitehead —Morris
B. Beecroft. TROY—John Albert Barnes; Archi-
bald Buchanan; Eugene Francis Connally.

John Joseph English; Clayton Longueville Gifford; Peter Lyons Harvie;
John Thomas Hopkins Hogan; Alson Joye Hull; Charles Franklin
Kirlin.

Alexander Mitchell Loewenstein; Walter Daniel McKenna; William
Bernard McKeon; Walter Hugh McShane; Charles Mester; Frank J.
Noonan; William Panitch.

Harold Payne Sawyer; William Thomas Shields Jr.; William Trotter;
Morris Samuel Wineck.

Richmond County

STATEN ISLAND—Francis F. Callahan; Francis C. Clark; Robert
Emmet Conway; Arthur Storer Driscoll; Goodlatte Browne Gilmore;
Frank Julius Herbig; John R. Hicks; F. S. Jameson; Frederick P. Lee;
John Louis Nicholaus; Vincent John Thomas O'Neill; Morris Louis Pel-

lack; Joseph Edward Rapuzzi; Charles Rieger; Edward Sherrard Rimer; Robert Nathaniel Severance; Vincent Gorman Smith; Enrico Celeste Soldini; Joseph Sparck; John T. Sprague; Burton Learn Sterner; Oscar Teague; Alfred Harold Thomas; Stanley Leon Wang; Dayton Carroll Wiggins; Jesse Rush Patton.

Rockland County

HAVERSTRAW—William Blake Gibb; Jacob Harry Hirsch. SLOATSBURG—John Mance Gillette. STONY POINT—Albert Francis Augustus Barry; Ralph A. Hurd; John Louis Sengstacken. SUFFERN—John Atkins Payne.

Saratoga County

BALSTON SPA—Robert Willard Deming. CRESCENT—Walter Robert Grunewald. MECHANICVILLE—Gilbert Worden Crissey; George Augustine Green. MIDDLE GROVE—Patrick Joseph Hirst. SARATOGA SPRINGS—George Byron Brown; Carl Rodney Comstock; Frederick George Eaton; James T. Houghton; John Bell Ledlie; Elbert Alonzo Palmer; James Robert Swanick; Edward Hellis Vines.

SCHUYLERVILLE—Edward James Callahan; Robert S. Cleaver; Edward Cochrane Gow. WATERFORD—John Luverne Hemstead.

Schenectady County

DELANSON—Wilbur Foster McDonald. SCHENECTADY—Garrett Marcellus Clowe; Rolland Barkley Doig; James M. Dunn; John P. Faber; William Peter Faust.

Joseph N. Garlick; John Duncan Gulick; John Alexander Heatley; Charles Abel Howland; Earl H. Jackson; Arthur Krida; Hubert Mann; Frederick Francis McGauley; Charles Gould McMullen; Harold Sydney Morgan; David W. Overton; Jonathan Pearson; Peter Francis Purcell; Robert Reid.

Jesse Melville White Scott; Daniel Glen Smith; Waldron Allen Stearns; Claude William Walker; Alfred LeRoy Warner; Calvin Bassler Witter; Charles Wesley Woodall; Joseph Leon Wozniak. SCOTIA—William Carl Treder.

Schoharie County

COBLESKILL—David W. Beard; John J. Beard; Millard Francis Shafer. MIDDLEBURY—Willard Tipple Rivenburgh. RICHMONDVILLE—William Edgar Low.

Schuyler County

ALPINE—John William Burton. VALOIS—Palmer H. Lyon. WATKINS—Noah Philip Norman.

Seneca County

OVID—John Graham Gordon. SENECA FALLS—Robert Knight; Frederick William Lester. WATERLOO—Francis Victor Hoehn; William Wallace Carleton. WILLARD—John Francis McNeill.

Steuben County

BATH—Raymond Coleman Hill. CANISTEO—Harold Hubbard Mitchell. CHOCTON—John H. Miller; CORNING—Willis Sylvester Cobb; Ralph Francis Gregorius. HORNELL—Milton Gardner Burch; James Raymond Kelly; Leon M. Kysor; Frederick Carver Robbins; George Ellis Taylor; William Joseph Tracy; Clark Anson Wilcox. JASPER—Leon Mitchell Wilbor.

St. Lawrence County

BENSON MINES—David Moulton Gardner.

MASSENA—Raymond Francis McAlvon. NORWOOD—Lloyd Thomas McNulty. OGDENSBURG—Samuel William Hausman; Richard Henry Hutchings; Grant Charles Madill; Jay E. Meeker; Charles Rose Miller. POTSDAM—Sidney Pope Brown; Robert Jesse Reynolds.

PYRITES—Michael Francis Sullivan.

Suffolk County

AMAGANSETT—Howell F. Babcock. BABYLON—Daniel Woodbury Wynkoop. BAY SHORE—Louis F. Garben; Joseph T. Low. BRIDGEHAMPTON—Edwin Carpenter Gilbert. CENTRAL ISLIP—William N. Barnhardt; Geoffry C. H. Burns; William Alfred Conlon. FT. H. G. WRIGHT—George Nicholas Acker. GOODGROUND—Thomas H. Chattle; David Davidson. HUNTINGTON—Wm. Jas. A. Donahue; Willoughby Carr Pendill. KINGS PARK—Harold A. Benson; Aaron Joshua Rosanoff; Harry Arthur Steckel; John Valentine Swierat. NORTHPORT—Wilbur Carleton Travis. PATCHOGUE—Ernest Levi Hicks. SAG HARBOR—James Hugh McCort. SETAUKET—Irvine Justin Russell. SMITHTOWN BRANCH—Guy Hanford Turrell. SOUTHAMPTON—Joseph Storer Wheelwright. ST. JOHNSVILLE—George W. Beebe.

Sullivan County

LIVINGSTON MANOR—Victor Gabriel Bourke. ROSCOE—Charles Moore Allaben.

Tioga County

NICHOLS—Leroy Jakway Osborne. OWEGO—Kennedy Furlong Rubert; Sidney Welles Thompson. SPENCER—Frederick Terwilliger. WAVERLY—Paul Eugene Betowski; Arthur John Smith; Frederick Hallett Spencer.

Tompkins County

ENFIELD CENTER—David Robb. GROTON—James Howard Van Marter. ITHACA—John Frank W. Allen; Reed Brinsmade Bontecou; Albert Cyrus Durand. Chas. Henry Gallagher; Walter Bonnell Holton; Minor McDaniels; Samuel Archer Munford; Martin Buel Tinker; Isador Mack Unger; Otto Emil Utzinger; Royden Mendeville Vose. LUDLOWVILLE—Ira A. Allen.

Ulster County

ELLENVILLE—Raymond Thornton Potter. KINGSTON—William J. Cranston; Philip Wm. De Garmo; Frank Alford Johnston; Elbert Du Bois Loughran; Frederick Snyder. SAUGERTIES—Rudolph Francis Diedling.

Warren County

CHESTERTOWN—Howard Barton Swan. GLEN FALLS—Walter Schneider Bennett; Henry Elisha Clarke; Conrad Rowland Hoffman; Morris Maslon. POTTERSVILLE—George Biffy.

Washington County

GRANVILLE—William Leslie Munson. GREENWICH—Michael Augustine Rogers HUDSON FALLS—John Leonard Byrnes; Orla James Park. SALEM—Frederick William McSorley. WHITEHALL—Robert Edward Plunkett.

Wayne County

ALTON—William George Lewis. LYONS—Reuben Spencer Simpson. MARION—Arthur Besemar. NEWARK—Louis Stone Kelley; John Andrew Morrisey; Cyrenius Adelbert Newcomb; James Raymond Sanford. PALMYRA—Lee Rice Pierce. WOLCOTT—Samuel Wilson Houston.

Westchester County

BEDFORD—George Peter Coopernall. BRIARCLIFF MANOR—Edwin Henry Nall. BRONXVILLE—Edgar William Beckwith; Herbert Richard Charlton; Vernon Offutt Heddens; Henry Earl McGarvey; Marion Childress Wilson. DOBBS FERRY—Jos. Hoyt Beattie. EASTVIEW—Thomas Raines. HARTSDALE—Alwin Max Pappenheimer; Walter C. Tilden. HASTINGS-ON-HUDSON—Francis Romeyon Lyman. LARCHMONT—Ellsworth Johnson Smith MT. KISCO—Elisha Milton Brown; Ellis Barksdale Gray; Arthur Randolph Green. MT. VERNON—Karl Gebhard; John Joseph Hughes; Charles D. Kayser; Wm. Matthew Kenno; Abraham Albert Levine; Darwin Oliver Lyon; William G. Phipps; Leo Grover Weishaar; Walter Stuart Woodruff. NEW ROCHELLE—August Leo Beck; Edward L. Burwell. Charles Campbell Deklyn; Paul Brice Fitzgerald; Matthias Laukton Foster. Clifford H. Fulton.

Clifford Wood Hendrickson; Samuel S. Markel; Eugene T. Morrison; George Augustus Peck; Clarence A. Read; John Stephen Reardon; Charles Augustus Smith; Henry Woodruff Titus. NORTH TARRYTOWN—Alfred Edward Oakes OSSINING—Thomas Randolph Barry; Lawrence Dennis Cremin. Robert Wm Helm. PEEKSKILL—Hickson Field Hart; Matthew Francis Olstein. PELHAM—Lawrence Mason Simonson. PLEASANTVILLE—Horace Eddy Robinson. PT. CHESTER—George Berger; George Guttman Ornstein; Benjamin David Ruben; John Franklyn White. SHRUB OAK—Allen G. Fechtig; William Stanton Martens. WHITE PLAINS—Karl Murdock Bowman; Sanger Brown; Frederick Brush; Ralph Hill Chaney; Louis B. Chapman; John Francis Holden; Watson Angus Lawrence; Walden Evermont Muns; Wm. Jos. Meyer; Walter Wesley Mott; Sylvanus Purdy; Edwin George Ramsdell; Rae Latham Strong YONKERS—Samuel Dennis Bell; Albert Newell Benedict; Harrison Betts; William Edgar Boyce; Ethen F. Butler; Francis Jos. Cline; William John Dougherty; John Joseph Flynn; Samuel Emmet Getty; Marmaduke Jos Hoy, Moses Katz; Verner Kennedy.

William Bruce Machen; Robert Malcolm; Geo. Albert Mott; John Christian Moth; David Ramsay; F. O. Reed; Wilbur Watkins Stearns; William Jerome Vogeler; Theodore Stephen West.

RYE—George Joseph Hogben

MT. VERNON—Charles Layton Weitz.

LARCHMONT—Harold C. Tooker.

Wyoming County

ATTICA—Willard DeForest Preston. CASTILE—Harold Elmer Foster. GAINESVILLE—George Stephen Skiff PERRY—Thos. M. Calladine Jr.; Milton Oren Houghton WARSAW—James Frank Crawford. WYOMING—Arthur Willard Hubbard

Yates County

BRANCHPORT—John Henry Rose. PENN YAN—Edwin Carlton Foster; Herbert Wood Matthews; Bernard Samuel Strait.

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

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Joseph B. Greene. Second Vice President	Asheville
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First District.—Currituck, Camden, Pasquotank, Perquimans, Gates, Chowan, Washington, Tyrrell, Dare and Hyde counties. W. H. Ward, Councilor, Plymouth.

Second District.—Hertford, Martin, Pitt, Bertie, Beaufort, Lenoir, Jones, Craven, Pamlico and Carteret counties. K. P. B. Bonner, Councilor, Morehead City.

Third District.—New Hanover, Pender, Onslow, Duplin, Bladen, Sampson, Columbus and Brunswick counties. Ernest S. Bulluck, Councilor, Wilmington.

Fourth District.—Northampton, Halifax, Nash, Edgecombe, Johnston, Wilson, Wayne and Greene counties. M. M. Salibar, Councilor, Wilson.

Fifth District.—Cumberland, Robeson, Scotland, Lee, Montgomery, Moore, Harnett and Chatham counties. Ben Hackney, Councilor, Bynum.

Sixth District.—Wake, Franklin, Warren, Vance, Granville, Person, Caswell, Alamance. Orange and Durham counties. A. C. Campbell, Councilor, Raleigh.

Seventh District.—Anson, Union, Stanly, Macklenburg, Cabarrus, Lincoln, Gaston, Cleveland and Rutherford counties. J. E. S. Davidson, Councilor, Charlotte.

Eighth District.—Guilford, Randolph, Forsythe, Stokes, Ashe, Rockingham, Yadkin, Alleghany, Wilkes and Surry counties. J. W. Ring, Councilor, Elkins.

Ninth District.—Davie, Davidson, Rowan, Catawba, Burke, Watauga, Mitchell, Alexander, Iredell and Caldwell counties. M. R. Adams, Councilor, Statesville.

Tenth District.—Buncombe, Yancey, McDowell, Madison, Polk, Henderson, Haywood, Transylvania, Jackson, Swain, Macon, Grahame, Clay and Cherokee counties. Carl V. Reynolds, Councilor, Asheville.

HONOR ROLL

Alamance County

BURLINGTON—Rufus Samuel Vass; Charles Taylor Vernon. GRAHAM—Julius Jackson Barefoot. SWEPSONVILLE—Presly Robinson Brown.

Anson County

WADESBORO—Charles I. Allen; James Madison Covington Jr.; James Matheson Davis.

Avery County

NEWLAND—Miles Thompson Long.

Beaufort County

WASHINGTON—Armistead K. Tayloe.

Bertie County

MERRY HILL—Harry Clay Willis. ROXOBEL—Edgar Powell Norfleet.

Bladen County

BLADENBORO—Ralph Calvert Sadler. CLARKTON—DeWitt Duncan Clark. COUNCIL—Andrew Byron Holmes. ELIZABETHTOWN—George Fletcher Bullard.

NORTH CAROLINA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Alamance	492	12.9	30,935	814	38	..	20	27	13	4
Alexander	289	57.8	12,054	2,410	5	..	5	5	3	..
Alleghany	234	39.0	7,745	1,290	6	..	5	5	1	..
Anson	556	30.9	28,090	1,560	18	..	11	16	1	3
Ashe	427	25.1	19,074	1,244	17	..	8	9	9	..
Avery	280	35.0	11,479	1,834	8	1	7	8	8	1
Beaufort	840	26.7	34,143	1,422	24	..	8	20	14	1
Bertie	703	40.2	24,864	1,657	15	..	8	12	3	2
Bladen	1,004	91.3	18,246	1,658	11	..	5	8	8	4
Brunswick	790	197.5	15,728	3,932	4	..	3	3	2	1
Buncombe	639	5.9	53,821	493	109	5	59	86	76	19
Burke	534	33.4	24,115	1,507	16	..	9	11	13	1
Cabarrus	390	13.9	29,002	1,035	28	..	17	22	28	2
Caldwell	512	39.4	23,200	1,784	13	1	10	10	6	1
Camden	220	110.0	5,762	2,881	2	..	2	2	2	..
Carteret	573	44.1	15,211	1,170	13	..	10	11	7	1
Caswell	402	67.0	14,858	2,476	6	..	2	3	4	..
Catawba	408	13.6	32,141	1,071	30	..	11	18	15	3
Chatham	696	53.5	22,635	1,741	13	..	4	7	9	1
Cherokee	454	34.9	15,797	1,215	13	..	6	11	10	2
Chowan	165	20.6	12,066	1,508	8	..	6	6	1	1
Clay	220	73.3	3,909	1,303	3	..	2	2	..	..
Cleveland	488	16.3	33,647	1,121	30	..	11	25	17	1
Columbus	933	58.3	32,944	2,059	16	..	15	15	8	4
Craven	660	30.0	26,640	1,210	22	..	18	20	13	4
Cumberland	1,013	33.8	33,719	1,123	30	..	21	28	17	4
Currituck	292	48.7	8,543	1,423	6	..	1	5	5	..
Dare	377	94.7	4,902	1,225	4	..	2	2	1	1
Davidson	519	24.5	33,785	1,535	22	..	17	21	20	1
Davis	258	36.8	14,327	2,046	7	..	3	5	3	..
Duplin	783	37.1	27,659	2,126	13	..	10	10	10	2
Durham	291	6.1	41,877	872	48	..	24	40	36	6
Edgecombe	509	10.2	35,966	719	50	1	36	41	26	9
[1]Forsyth	376	5.8	66,106	1,032	64	1	48	54	42	9
Franklin	468	23.4	24,692	1,234	20	..	11	16	11	5
Gaston	371	9.3	42,818	1,070	40	1	21	34	24	6
Gates	359	44.9	10,485	1,310	8	..	3	7	1	2
Graham	298	59.6	5,046	1,009	5	..	1	1	1	..
Granville	503	27.9	26,444	1,469	18	..	8	14	15	2
Greene	252	42.0	13,846	2,307	6	..	2	4	5	..
Guilford	691	6.6	76,134	725	105	3	61	82	65	16
Halifax	676	25.0	42,650	1,579	27	..	14	20	9	5
Harnett	595	29.7	26,689	1,334	20	..	12	15	15	2
Haywood	546	28.4	24,523	1,290	19	..	6	16	11	17
Henderson	558	32.8	17,837	1,049	17	..	9	13	11	1
Hertford	341	31.0	16,270	1,479	11	..	6	8	4	1
Hoke	350	31.8	13,400	1,218	11	..	7	8	10	3
Hyde	617	69.5	8,840	982	9	..	5	8	1	2
Iredell	588	15.5	38,148	1,003	38	1	23	28	18	6
Jackson	494	98.8	13,834	2,766	5	..	4	5	4	2
Johnston	694	24.0	48,080	1,659	29	..	21	23	23	5
Jones	417	68.2	9,082	1,513	6	..	5	6	3	1
Lee	261	26.1	11,376	1,137	10	..	7	10	8	2
Lenoir	397	14.3	25,783	920	28	..	12	18	13	3
Lincoln	299	23.0	18,324	1,408	13	..	6	11	9	..
McDowell	443	36.9	14,245	1,187	12	..	7	9	6	1
Macon	513	51.3	12,255	1,225	10	1	3	6	5	2
Madison	436	27.2	20,132	125	16	..	6	9	9	2
Martin	438	24.3	19,558	1,086	18	..	11	15	15	3
[2]Mecklenburg	597	5.1	75,617	6,082	117	2	66	96	70	29
Mitchell	371	61.8	10,263	1,710	6	..	4	4	1	1
Montgomery	498	41.5	15,530	1,319	12	..	6	10	10	3
Moore	639	37.6	17,010	1,000	17	1	10	10	8	1
Nash	586	30.8	39,747	2,091	19	..	10	16	9	3
New Hanover	216	4.5	36,601	762	48	..	36	42	32	12
Northampton	564	31.3	23,180	1,321	18	..	10	14	15	4
Onslow	743	92.9	15,719	1,964	8	..	2	5	5	..
Orange	390	32.5	15,338	1,278	12	..	8	13	9	3
Pamlico	350	70.0	11,368	2,273	5	..	4	4	4	1
Pasquotank	223	13.1	18,907	1,112	17	..	10	16	13	2
Pender	815	135.8	16,997	2,832	6	..	4	5	1	1
Perquimans	252	42.0	11,757	1,959	6	..	4	6	3	1
Person	391	27.9	17,846	1,227	14	..	9	10	11	2
Pitt	627	20.2	40,320	1,300	31	..	20	29	16	8
Polk	251	31.4	8,103	1,012	8	..	6	8	6	1
Randolph	803	28.7	30,409	1,086	28	..	10	21	12	1
Richmond	521	26.0	22,460	1,123	20	..	17	20	14	4
Robeson	1,051	27.0	52,964	1,358	39	..	27	32	19	4
Rockingham	579	22.3	38,836	1,493	26	..	18	24	9	3
Rowan	489	11.9	42,232	1,030	41	..	25	33	29	5
Rutherford	544	28.6	30,781	1,620	19	..	10	15	13	3
Sampson	922	51.2	32,612	1,811	18	..	12	13	12	6
Scotland	349	21.8	17,413	1,088	16	..	11	13	12	2
Stanly	416	21.9	23,332	1,228	19	..	11	17	15	6
Stokes	480	24.0	20,360	1,018	20	..	8	18	8	3
Surry	520	16.8	32,762	1,056	31	..	12	22	24	3
Swain	553	50.3	11,864	1,078	11	..	4	8	8	..
Transylvania	379	42.1	7,608	845	9	..	4	7	4	1
Tyrrell	390	145.0	5,392	2,696	2	..	2	2	2	..
Union	565	20.2	37,744	1,348	28	..	12	22	14	4
Vance	279	16.4	21,425	1,236	17	..	14	15	8	6
Wake	845	7.7	69,508	631	110	2	65	91	76	29
Warren	425	47.2	21,080	2,342	9	..	5	5	6	..
Washington	327	46.7	11,394	1,627	7	..	1	4	5	..
Watauga	342	31.1	11,493	1,044	11	..	7	7	..	..
Wayne	615	15.8	38,867	996	39	1	21	30	19	5
Wilkes	735	56.5	32,770	2,520	13	..	8	9	10	..
Wilson	384	13.7	31,679	1,131	28	..	21	25	24	5
Yadkin	324	27.0	16,408	1,367	12	..	7	9	1	1
Yancey	298	42.6	12,515	1,787	7	..	5	6	..	..
Totals	49,370	22.1	2,433,782	1,087	2,237	21	1,251	1,706	1,284	310

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1. Includes Winston-Salem, population 32,216; physicians 55 [M.R.C. 9].
2. Includes Charlotte, population 40,759; physicians 97 [M.R.C. 28].

Brunswick County

SOUTHPORT—J. Arthur Dosher.

Buncombe County

ASHEVILLE—*Everett Sperry* Barr; Louis G. Beall; Thomas Patton Cheesborough; E. R. Cocke; Charles DeW. Colby; Marshall Hall *Fletcher*; *Thompson* Frazer; Joseph B. *Greene*; Lewis Muller Griffith; William Pinkney Herbert; Charles Simonton Jordan; Ben M. Meriwether; Arthur Thomas *Prichard*; William Henry Scruggs *Jr.*; *Gaillard Tennent.* *CANDLER—John Calvin* Rich. STOCKSVILLE—Burnice Earl Morgan; Grady Alexander Morgan.
ASHEVILLE—Paul Henry Ringer.

Burke County

MORGANTON—James William *Vernon.*

Cabarrus County

CONCORD—Sidney E. Buchanan; Joe Albert Hartsell.

Caldwell County

LENOIR—Clarence La *Fayette Wilson.*

Carteret County

MARSHALLBURG—James E. A. Siske.

Catawba County

HICKORY—Fleet S. Steele; Jacob Harrison Shuford. NEWTON—Matthew Locke McCorkle.

Chatham County

SILVER CITY—Frank R. Wrenn.

Cherokee County

ANDREWS—Cladius V. *Orr.* *MURPHY*—Noah Bunyan Adams.

Chowan County

TYNER—Murray Parmer Whichard.

Cleveland County

LAWNDALE—Thomas Byron Gold.

Columbus County

BOARDMAN—Herbert Frederick Munt. *CERRO GORDO*—L. Dowe Floyd. VINELAND—Richard Bidgood Whitaker. WHITEVILLE—Henry *Byrne Maxwell.*

Craven County

DOVER—Stephen James Hawes. *NEWBERN—Robert D.* Jones; Charles L. Lupton; Raymond Pollock.

Cumberland County

COOPER—*Henry Cleveland Turlington.* FAYETTEVILLE—James V. McGougan. STEDMAN—*John B.* Bullard.
FAYETTEVILLE—Owen Bailey Williams.

Dare County

BUFFALO CITY—*James Shepard Milliken.*

Davidson County

LEXINGTON—James Robert Hawkins.

Duplin County

KENANSVILLE—James William Farrior. *WALLACE—John Daniel* Robinson.

Durham County

DURHAM—Edwin Godwin Reade; Charles Haddon Shepard; Jos. Anderson Speed; Geo. Thomas Watkins; *Charles Augustus* Woodward. WEST DURHAM—Baird Urquart Brooks.

Edgecombe County

CONETOE—Timothy Graham Williams. ROCKY MOUNT—*Hugh* Edgar Clark; Alvin Clay McCall; Byrd C. Willis. TARBORO—William Wills Green; William Lawrence Joyner; James Grover Raby; *Thomas Hayes* Royster. WHITAKER—Joseph Henry Cutchin.

Forsyth County

WINSTON-SALEM—Thomas M. Chaney; Sylvester Douglas Craig; Frederick Moir Hanes. Charles Salomon Lawrencé; Everett Augustin Lockett; Le Roy Salmons; John Carroll Wiggins; John C. Williamson; *Wortham Wyatt.*

Franklin County

FRANKLINTON—Russell Todd Uhls; Abram R. Winston. LOUISBURG—Hodge A. Newell. YOUNGVILLE—Claude Timberlake.
FRANKLINTON—Mack Canstuart King.

Gaston County

BELMONT—Charles Erwin McLean; John Mason Pressly. GASTONIA—Roland Smith Clinton; Lee Johnson. LOWELL—George Riddle Patrick. MT. HOLLY—*Burmah Dixon* Moore.

Gates County

SUNBURY—Harry Eskridge *Brooks.*
HOBBSVILLE—Thomas Leslie Carter.

Granville County

OXFORD—Benjamin Kingsey Hays; William Nelson Thomas.

Guilford County

GREENSBORO—Charles W. Banner; Joseph Henry Boyles; Walter Francis Cole; Booton Stover Compton; Mont Royal Farrar; Harold Roberts Lipscomb; John W. Long; *Herbert Hammond Ogburn*; *Adlai* Stevenson Oliver; Frederick James Pate; Henry Frank Starr; Julius *Graham Thomas.* HIGH POINT—John T. Burrus; Thomas Menees Stanton; Frederick Raymond Taylor. SUMMERFIELD—Newton Graves Wilson.

Halifax County

GARYSBURG—Wester Ghio Suiter. HOBGOOD—Virgil Wilson Leggett. ROANOKE RAPIDS—Daniel Frank Patchin. ROSEMARY—*Robert Payne* Beckwith. SCOTLAND NECK—Allie Dexter Morgan.

Harnett County

DUKE—Frank Rexborough Ruff. LILLINGTON—Laurie J. Arnold.

Haywood County

CANTON—Francis M. Davis; Wiley C. Johnson; Robert W. S. Ferram; Jesse M. Russell. SUNBURST—Burton *Barcett Sturdivant.* WAYNESVILLE—Joshua Fanning Abel; Joseph Howell Way.

Henderson County

EAST FLAT ROCK—B. F. Cliff.

Hartford County

AHOSKIE—Rack F. Benthall.

Hoke County

RAEFORD—Albert R. Dickson. SANATORIUM—Reuben A. McBrayer; Sanford Webb Thompson Jr.

Hyde County

FAIRFIELD—Thomas Preston Burrus; Thos. A. Mann.

Iredell County

MOORESVILLE—Pinkney Jones Chester. STATESVILLE—R. A. Campbell; James Wagner Davis; John Calvin Dye; Colte Long Sherrill. SWEET HOME—Edward Steptoe King.

Jackson County

SYLVA—Charles Z. Candler; Grover Wilkes.

Johnston County

KENLY—George Stephenson Coleman; Grover Barney Woodward. PRINCETON—Oscar Eason. SELMA—William Edward Wilmerding. SMITHFIELD—Thel Hooks.

Jones County

MAYSVILLE—Colin Shaw.

Lee County

JONESBORO—Evander McNair McIver. SANFORD—Charles L. Scott.

Lenoir County

KINGSTON—Mercer Parrott; Vance Peery. LA GRANGE—George L. Pritchard.

Macon County

HIGHLANDS—Geo. S. McPherson.
HIGHLANDS—George Sturtevant McPherson.

Madison County

MARS HILL—Oliver Linwood Stringfield.
SPRING CREEK—Allen G. Thurman Hipps.

Martin County

OAK CITY—Wooster Hassell House. WILLIAMSTON—Roderick Mark Bule; Hugh Brantley York.

McDowell County

OLD FORT—Donald Munro McIntosh.

Mecklenburg County

CHARLOTTE—James Ramsey Alexander; William Allan; Dewitt Ray Austin; James A. Bangle; Eli C. Boyette; Addison George Brenizer; Vanderbilt Brown.

Joseph H. Caldwell; Thomas Craven; John Donnelly; Albert Durham; Lawrence Merrill Fetner; Robert Miller Gallant; Marcus Calvin Houser; Leighton Watson Hovis; Baxter R. Hunter; Myers Hunter; Robert Frederick Leinbach.

John Wilson MacConnell; James Pleasant Matheson; Hamilton Witherspoon McKay; Robert Alexander Moore.

Samuel Albertus Rhyne; John Kirkland Ross; James W. Squires; Maurice Lyndon Townsend; William E. Wishart.

MATTHEWS—John William Law Orr.
CHARLOTTE—Parks McCombs King; Isaac William McLean.

Mitchell County

BAKERSVILLE—Arthur David Gouge.

Montgomery County

STAR—Ernest Lee Dameron. TROY—Charles Wallace Armstrong; Charles Daligny.

Moore County

CARTHAGE—Charles Talmadge Grier.

Nash County

BAILY—Malthus Reaumer Freeman. BATTLEBORO—Arthur Wood Deans. NASHVILLE—John A. Winstead.

New Hanover County

WILMINGTON—Ernest Southerland Bullock; Herbert Augustus Codington; Andrew Howell Harriss; Joseph Ward Hooper; John Walcott Kay; John Bunyan LeGwin.

James Farish Robertson; William Thomas Ruark; Egbert Theophilus Scott; John Thames; John Eugene Wine.

Northampton County

GARYSBURG—Carl Putnam Parker. POTECASI—Paul G. Parker. RICH SQUARE—Joseph Clinton Vaughan. WOODLAND—Walter Raleigh Parker.

Orange County

CHAPEL HILL—Eric Alonzo Abernethy; Louis Harward Webb. HILLSBORO—*Robinette Burns Hayes.*

Pamlico County

KANNAPOLIS—Randolph Edwin Watts.

Pasquotank County

ELIZABETH CITY—Claude Williams. WEEKSVILLE—Richard Boyd Davis.

Pender County

ATKINSON—John Thomas Hoggard.

Perquimans County

HERTFORD—Thomas Shelton McMullan.

Person County

ROXBORO—Samuel S. Montague; Benjamin Adams Thaxton.

Pitt County

AYDEN—George Grady Dixon. BETHEL—Cecil Garrenton. FARMVILLE—Herbert Pennell Mosely. GREENVILLE—Milton Thomas Edgerton; Cicero Jasper Ellen; James Cannon Greene; Charles O'Hagan Laughinhouse; Karl B. Pace.

Polk County

TRON—Marion Cherigny Palmer.

Randolph County

RANDLEMAN—Henry Walter Tidmarsh.

Richmond County

HAMLET—Wm. Moncure Jr. POWELTON—Neill Graham Nicholson Jr. ROCKINGHAM—Frank Bernard Garrett; John H. Quick.

Robeson County

LUMBERTON—Russell S. Beam. RED SPRINGS—William P. McKay. ST. PAULS—John Fredk. Nash; Claude Terrel Poole.

Rockingham County

REIDSVILLE—Harvey Robinson. SPRAY—Samuel Walker Hurdle; Andrew F. Tuttle

Rowan County

GOLDSBORO—Paul C. Carter. ROCKWELL—Glenn W. Choate. SALISBURY—Jacob Henry Rozelle; Carl M. Van Poole; Chalmers Van Poole.

Rutherford County

CAROLEEN—William Ernest Brackett. RUTHERFORDTON—Henry Norris; William Marvin Scruggs.

Sampson County

CLINTON—Bruce Fowler Butler; Eugene Ramsey Hardin; John Kerr Jr. GARLAND—William Henry Sloan. INGOLD—David B. Sloan. KERR—Grover Cleveland Beard.

Scotland County

GIBSON—Everett A. Livingston. LAURINBURG—Nicholas Boddie Cannady.

Stanly County

ALBEMARLE—Jasper Neill Anderson; Lucius Victor Dunlap; Charles E. Lyday, Levin Freeland Mayruder; Floyd Caldwell Shugart. NORWOOD—Thomas A. Hathcock.

Stokes County

GERMANTON—Paul Augustus Petree. PINNACLE—Bernard Holman. WALNUT COVE—Beverly Nicholas Jones.

Surry County

ARARAT—Alex Franklin Jones. MT. AIRY—Edward Clayton Ashby; Darius Cleveland Absher.

Transylvania County

BREVARD—Thomas Johnson Summey.

Union County

MONROE—Robert Lee Payne. WAXHAW—Lemuel Edwin Guin. WINGATE—Robert Jones Lovill; Edward Jerome Williams.

Vance County

HENDERSON—William Henry Bryant; Numa Haden Crews; Edwin F. Fenner; Leland Carson McIntosh; Thomas Clinton Tinsley. KITTRELL—Frederick Overton Swindell.

Wake County

CARY—Carlyle Edwards. HOLLY SPRINGS—Wiley Simon Cozart Jr. RALEIGH—Carl Wendell Bell; Alton Cook Campbell; Kelso Adair Carroll; Amzi Jefferson Ellington; Thomas Woodly Haywood; Wilbur Gibson Jenkins; Robert S. McGeachy; John Sasser McKee; Alfred Mordecai; Robert Primrose Noble; Arthur Sylbert Pendleton; Ivan M. Proctor; Hickman Ray; John E. Ray; Hubert A. Royster; Ralph S. Stevens; Hugh Alexander Thompson; Frank Johnson Thornton; Henry Gray Turner; Louis Nelson West; Thaddeus Earl Wilkerson. WAKE FOREST—Luther T. Buchanan Jr.; John Brewer Powers. WENDELL—John L. Moore. ZEBULON—Chas. Ely Flowers.
RALEIGH—Lemuel Thackara Delany.
WAKE FORREST—Wm. T. Carstarphen.

Wayne County

GOLDSBORO—Ralph L. Daniels; Marshall H. Hood; Richard Spicer. MOUNT OLIVE—George Blythe Morris. SAULSTON—Hector McLean Person.

Wilson County

WILSON—James Cornelius Braswell; Elijah Thomas Dickerson; Michael Saliba; Ernest Lee Strickland; Charles LeRoy Swindell.

Yadkin County

EAST BEND—John Thomas Benbow.

NORTH DAKOTA STATE MEDICAL ASSOCIATION

Officers 1917-18

G. M. Williamson, President	Grand Forks
Edgar A. Pray, First Vice President	Valley City
W. P. Baldwin, Second Vice President	Casselton
Fred Ewing, Third Vice President	Kenmare
H. J. Rowe, Secretary	Casselton
W. F. Sihler, Treasurer	Devils Lake

Councilor Districts and Officers

First District.—Cass and Ransom counties. Paul Sorkness, Councilor, Fargo.

Second District.—Benson, Pierce, Ramsey, Rolette and Towner Counties. W. D. Jones, Councilor, Devils Lake.

Third District.—Cavalier, Grand Forks, Nelson and Pembina counties. J. E. Countryman, Councilor, Grafton.

Fourth District.—Burke, Pierce (part), Ward and Williams counties. A. S. Nicholson, Councilor, Williston.

Fifth District.—Barnes and Griggs counties. W. P. Baldwin, Councilor, Casselton.

Sixth District.—Adams, Burleigh, Emmons, Hettinger, McLean, Mercer, Morton and Stark counties. F. R. Smyth, Councilor, Bismarck.

Seventh District.—Stutsman County. G. Golseth, Councilor, Jamestown.

Eighth District.—Dickey, LaMoure, Richland and Sargent counties. L. B. Green, Councilor, Edgeley.

Ninth District.—Eddy, Foster and Wells counties. Chas. MacLachlan, Councilor, New Rockford.

Tenth District.—Traill and Steele counties. James Grassick, Councilor, Grand Forks.

NORTH DAKOTA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Adams	997	199.4	4,420	884	5	..	4	5	2	1
Barnes	1,510	75.5	18,996	944	20	..	12	20	17	4
Benson	1,364	80.2	12,715	747	17	1	11	14	7	2
Billings	3,404	.....	3,736	.....	..	..	..	..	..	..
Bottineau	1,681	112.0	17,355	1,157	15	..	12	14	12	1
Bowman	1,164	166.2	5,210	747	7	..	4	5	7	1
Burke	1,113	159.0	9,111	1,300	7	..	6	6	2	..
Burleigh	1,651	63.5	14,642	563	26	2	18	23	20	5
Cass	1,763	33.2	43,386	826	53	1	31	42	38	12
Cavalier	1,494	124.5	15,879	1,324	12	..	9	11	5	2
Dickey	1,142	114.2	10,209	1,020	10	..	7	9	4	..
Divide	1,270	158.7	10,199	1,274	8	..	8	8	6	1
Dunn	2,084	231.5	9,450	1,050	9	..	4	4	2	..
Eddy	651	162.7	6,085	1,521	4	..	3	3	3	..
Emmons	1,563	195.3	10,562	1,320	8	..	5	6	4	1
Foster	644	80.5	6,389	798	8	..	4	7	7	2
Golden Valley	1,020	204.0	6,781	1,356	5	..	4	5	3	1
Grand Forks	1,433	32.5	29,007	659	44	..	27	35	34	8
[1]Grant	.....	.....	9,000	2,509	4	..	4	4	..	..
Griggs	717	119.5	6,700	1,116	6	..	5	6	6	..
Hettinger	1,132	226.4	8,232	1,646	5	..	4	5	4	2
Kidder	1,386	277.2	7,395	1,479	5	..	3	4	3	1
La Moure	1,147	95.5	11,784	982	12	..	9	12	8	3
Logan	997	997.0	7,431	7,431	1	..	1	1	1	..
McHenry	1,888	145.2	16,644	1,280	13	..	11	12	10	..
McIntosh	1,003	200.6	8,369	1,673	5	..	5	5	2	1
McKenzie	2,847	711.7	13,118	3,279	4	..	4	4	3	..
McLean	2,305	164.6	16,506	1,107	14	1	11	13	9	1
Mercer	1,110	277.5	7,717	1,929	4	..	4	4	3	2
Morton	4,742	316.1	19,586	1,305	15	1	10	14	11	1
Mountrail	1,914	174.0	12,334	1,121	11	..	8	9	6	4
Nelson	981	122.6	10,417	1,305	8	..	6	7	6	..
Oliver	720	720.0	4,276	4,276	1	..	1	1	1	..
Pembina	1,117	74.4	14,156	943	15	..	9	12	11	1
Pierce	1,055	105.5	9,687	968	10	..	8	9	3	2
Ramsey	1,205	708.8	15,011	883	17	..	12	16	13	4
Ransom	860	95.5	11,362	1,262	9	..	6	9	7	3
Renville	899	128.4	8,215	1,173	7	..	6	7	4	2
Richland	1,437	65.3	21,993	999	22	..	10	17	14	2
Rolette	918	153.0	9,755	1,625	6	..	6	6	6	1
Sargent	855	106.8	9,830	1,228	8	..	4	7	1	2
Sheridan	996	498.0	8,314	2,157	2	..	2	2	1	..
Sioux	1,050	262.5	2,338	584	4	..	2	4	1	1
Slope	1,272	636.0	5,717	2,858	2	..	2	2	2	..
Stark	1,356	96.8	15,037	1,074	14	..	10	11	11	3
Steele	717	239.0	6,744	2,248	3	..	3	3	3	1
Stutsman	2,282	103.7	26,769	1,216	22	1	18	21	15	3
Towner	1,037	129.6	9,230	1,153	8	..	6	8	4	2
Traill	865	96.1	12,971	1,441	9	..	7	8	9	..
Walsh	1,282	67.4	20,772	1,093	19	..	8	16	10	4
Ward	2,054	61.1	29,333	916	32	..	28	31	26	7
Wells	1,293	99.4	13,834	1,063	13	..	11	13	11	1
Williams	2,138	101.8	19,916	948	21	..	16	18	10	5
Totals	73,525	121.7	664,607	1.100	604	7	429	540	408	100

1. County recently organized; area included with that of other counties.

HONOR ROLL

Adams County

HETTINGER—*Carl Voss.*

Barnes County

FINGAL—Alexander Campbell MacDonald. VALLEY CITY—Charles E. Hunt; Joseph Williams Livingstone; Alexander W. MacDonald.

Benson County

ESMOND—Louis Belfair Derdiger. OBERON—Chas. Ray Tompkins.

Bottineau County

OMEMEE—William Ginsberg.

Bowman County

BOWMAN—Mark Mizener.

Burleigh County

BISMARCK—Julius O. Arnson; John Alfred Halgren; Hugo Mella; Eric Peer *Quain.* *REGAN*—Philip G. Reedy.

Cass County

ARTHUR—Thomas Roy Campbell. CASTLETON—William P. Baldwin. FARGO—James Prentiss Aylen; Frederick Harris Bailey; Walter Darrow Bayard; Geo. Albert Carpenter; Frank Irons Darrow; Harry John Fortin; James Francis Hanna; Axel Oftedal; Martin Philip Rindlaub. HUNTER—Herbert M. Knudtson.

Cavalier County

LANGDON—Judd Harris Kirkham. MUNICH—Edward Rudolph Lindner.

Divide County

NOONAN—*Joseph Allen* Smith.

Emmons County

HAZELTON—George Monteith.

Foster County

CARRINGTON—Edwin Lincoln Goss; John Ross MacKenzie.

Golden Valley County

BEACH—Alexander *Blake* McNab.

Grand Forks County

GRAND FORKS—Wilhelm S. Anderson; Theodore Bratrud; Robert Donald Campbell; Henry Herbert Healy; *John* Arnason Johnson; Olaf Kittelson; Orville Newton Meland; Arthur Peake.

Hettinger County

MOTT—Fred Eli Redman; *Fred T. Rucker.*

Kidder County

DAWSON—Roscoe Conkling Pryse.

La Moure County

KULM—Jacob Frederick Brenckle. LA MOURE—Martin Daniel Westle VERONA—Herbert Bertram Wentz.

McIntosh County

ASHLEY—Edwin Herman Maercklein.

McLean County

MERCER—Ralph Deming.

Mercer County

HAZEN—Leslie Guy Eastman. STANTON—Cecil Clifford Smith.

Morton County

MANDAN—Bernard Smith *Nickerson.*

Mountrail County

PARSHALL—Guy Samuel *Frogner.* PLAZA—Gustave Leander Rude STANLEY—*Frank Otis* Joseph Brigham. WHITE EARTH—Edward Kennedy.

Pembina County

CAVALIER—Charles Augustus Short.

Pierce County

RUGBY—James Edward Cramond. *WESTBY*—Jesse *Lot* Norris.

Ramsey County

BROCKET—John Aldren Dean Engesather. DEVILS LAKE—Ca Fisher; *George* Vere Jamieson; William F. Sihler.

Ransom County

ENDERLIN—Arley John Ostrander. LISBON—Thomas C. Patterso Ernest E. Wands.

Renville County

GLENBURN—Knute Otto Knudson. SHERWOOD—John Percy Greave

Richland County

HANKINSON—Dennis Edward Ryan. WYNDMERE—*Kenneth* Wa Wilder.

Rollette County

ROLLA—Bernard D. Verret.

Sargent County

COGSWELL—Charles E. Howard; *Howard Lee Saylor.*

Sioux County

SOLEN—Paul Frederick Rice.

Stark County

DICKINSON—William *H. Long;* Aloysius Patrick Nachtway; Victo *Hugo* Stickney.

Steele County

FINLEY—Andrew John Heimark.

Stutsman County

JAMESTOWN—Thomas Lloyd DePuy; William Albert Gerrish. MONT*PELIER*—Joseph Henry Plant.

Towner County

BISBEE—Axel Waldemar Swenson. EGELAND—Wayne Paul O'Brien

Walsh County

GRAFTON—John Edgar Countryman; Cyril John Glaspel. PARK RIVER—Clarence Wm. Robertson; Frank Elmer Weed.

Ward County

BERTHOLD—Samuel Joseph Hillis. KENMARE—Neil McLean. *MINOT*—J. Charles Jackman; Alexander J. McCannel; John Wesley Newlove; John Robert Pence; Frank E. Wheelon.

Wells County

SYKESTON—Ellis Frank Swarthout.

Williams County

EPPING—Dickenson Ober Wheelock. TIOGO—Simon Benhard Oliver. WILLISTON—Carlos Selby Jones; Hilmar Thorer Skovholt; Thomas Jefferson Strong.

OHIO STATE MEDICAL SOCIETY

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Second District.—Logan, Preble, Montgomery, Greene, Darke, Miami, Clark, Shelby and Champaign counties. John E. Hunter, *Councilor*, Greenville.

Third District.—Van Wert, Auglaize, Allen, Hardin, Marion, Mercer, Wyandot, Hancock and Seneca counties. W. B. Van Note, Councilor, Lima.

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Fifth District.—Erie, Huron, Lorain, Medina, Cuyahoga, Lake, *Geauga*, [illegible] and Trumbull counties. J. E. Tuckerman, Councilor, *Cleveland*.

[illegible] nmit, Portage, Mahoning, *Stark*, Wayne, Holmes, [illegible] counties. Edgar J. March, Councilor, Canton.

Seventh District.—Columbiana, Carroll, Jefferson, Harrison, *Belmont*, Monroe, Tuscarawas and Coshocton counties. James S. McClellan, Councilor, Bellaire.

Eighth District.—Fairfield, Guernsey, Noble, Washington, Muskingum, Morgan, Athens, Licking and Perry counties. A. B. Headley, Councilor, Cambridge.

Ninth District.—Hocking, Vinton, Meigs, Pike, Jackson, Gallia, Scioto and Lawrence counties. J. S. Rardin, Councilor, Portsmouth.

Tenth District.—Crawford, Morrow, Knox, Union, Delaware, Madison, Franklin, Pickaway and Ross counties. Wells Teachnor, Councilor, Columbus.

HONOR ROLL

Adams County

MANCHESTER—Ralph Waldo Emerson Irwin. SEAMAN—John Walter Irwin. WEST UNION—Samuel Jasper Ellison; Oliver Thoroman Sproull.

Allen County

BLUFFTON—Melville Dean Soash; Josiah S. Steiner. DELPHOS—John Wolfe. ELIDA—Gail E. Miller. LIMA—Harry F. Basinger; Joseph Cyrus Bradfield; Olen Edgar Chenoweth; Virgil H. Hay; Burt Hibbard; John Ray Johnson; Milton Jennea Longsworth; Albert Pfeiffer; Aldo Vernon Sibert; Edward D. Sinks; Claude Addison Tallman; Wilhelm Henry Vorbau; Matthias Ambrose Wagner; Edward George Weadock. SPENCERVILLE—Charles D. Gamble.

Ashland County

ASHLAND—Ray Collins Ash; Daniel Lester Mohn. LONDONVILLE—Jacob Meyers Heyde.

ASHLAND—Clarke Campbell Patton.

Ashtabula County

ASHTABULA—Paul Josef Collander; Charles C. Crosby; Frederick Jas. Driscoll (colored); Azro J. Pardee; Neville Edward Stewart. CONNEAUT—William Haymaker Leet; Otto Nellis Warner; Harold Wilson. GENEVA—Zalmon Omar Sherwood. JEFFERSON—Orr Abraham Dickson. ORWELL—Robert Raymond Sellers. PIERPONT—George Willard Lewis. ROCK CREEK—Chas. Scofield.

Athens County

AMESVILLE—George Elmer Flynn. ATHENS—Jay Randolph Crawley; Clarence Maurice Douthitt; Alfred G. Farmer; Emmett Lorenzo Hooper; James Thomas Merwin; Wiley True Sprague. GUYSVILLE—Edward Dorr Harper; Paul R. McLaughlin. NEW MARSHFIELD—Sherman Elmer Grant Pedigo. TRIMBLE—Vernon Grossenor Danford.

Auglaize County

NEW BREMEN—George Albert Havemann. ST. MARY'S—William August Deerhake; Harry Spencer Noble. WAYNESFIELD—James Morton Day.

Belmont County

BARNESVILLE—Robert John Judkins. BELLAIRE—Chas. Lester Reed; Fred Snell Wright. SHADYSIDE—James Clark Berry.

Brown County

GEORGETOWN—Edwin David Jackson. RIBLEY—George Platt Tyler Jr.; SARDINIA—Herbert M. Chaney.

Butler County

HAMILTON—John A. Grafft; Wilmer Eli Griffith; Wm. Norwood Rogers; Clement Dare Smedley; Chas. Albert S. Williams. SOMERVILLE—Wilbur Evans Beach.

Carroll County

CARROLLTON—Ralph Taylor Shipley. MALVERN—John Albert Rhiel.

Champaign County

URBANA—Henry Morgan Pearce; Maurice Leigh Smith. WOODSTOCK—Martin Earl Harrell.

Clark County

SPRINGFIELD—Robert M. Andre; Fred Ellis Hall; Charles Butler Hamma; Joseph Anthony Link; Joseph Webb.

Clermont County

AMELIA—William M. Hicks. LOVELAND—John Dillon Wakefield. MILFORD—Jas. Edwin Kennedy; Clyde Byron Terwillegar. NEW RICHMOND—David Michael Roberts.

Clinton County

BLANCHESTER—Robert Conard; Harold Eugene Gibson.

Columbiana County

COLUMBIANA—John A. Mellon. EAST LIVERPOOL—Oran Purdy Andrews; Charles Hodge Bailey; Chas. Everett Lemmon; Merle D. McCutcheon. HANOVERTON—Joseph B. McHenry. LEETONIA—Strickey Alvin Conrad; Howard Engler Harman; LeRoy Stanton Hennen. LISBON—Herbert Webster Bennett. SALEM—Henry Jerry John; James McClymonds McGeorge.

Coshocton County

COSHOCTON—Willis H. Keenan; Jacob D. Lower; Jas. Garfield Smailes. WALHONDING—Benjamin Fletcher Cureton.

Crawford County

BUCYRUS—Guthrie Olaf Burrell; Wilbur Glen Carlisle; Russel Jay Caton; Wm. C. Gates; Chas. Hamlin Pelten. CHATFIELD—Karl Herman Barth; Austin Ray Edwards. CHESTLINE—Ralph Raymond Harris. GALION—Maurice Linsey Allen; Martin Lewis Helfrich; John Bennett Kring; Paul August Murr.

Cuyahoga County

BRECKSVILLE—Theo. Breck. CHAGRIN FALLS—Edwin Foster Wakefield. CLEVELAND—Albert Harold Aland; Fred Lee Andrews; Joseph Charles Avellone; Ulysses Morris Bachman; William R. Barney; Richard P. Bell; A. E. Biddinger; Clark S. Bogart; Joseph H. Boutwell; Charles Albert Bowers; John Thos. Boykin; Charles McChesney Bray; Ernest Ralph Brooks; Frank E. Bunts; Theodore Burstein.

Wm. Hatfield Caine; Wilson Smith Chamberlain; Clyde Harrison Chase; Robert Clarke Jr.; Byron Bartlett Colvin; Frederick Sturges Cooper; George W. Crile; John Hays Crooks; Allen Greenleaf Crow; Franklin Earl Cutler.

John Chas. Darby; Paul Franklin Davidson; Howard Hubbell Davis; Trent Adam B. Denison; Richard Dexter; Arthur Lawrence Dippel; William Edward Dwyer; Arthur Bradley Eisenbrey; Frederick Arthur Euler.

OHIO

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Adams	516	20.2	24,755	916	27	..	8	20	19	4
[1]Allen	406	3.9	62,860	604	101	2	48	76	86	19
Ashland	421	10.5	24,281	607	40	..	13	24	20	4
Ashtabula	723	8.3	65,459	752	87	9	34	72	37	13
Athens	487	7.2	54,416	800	68	..	18	44	56	11
Auglaize	397	10.7	31,285	845	37	..	21	25	34	4
Belmont	639	7.9	88,520	1,106	80	..	36	55	70	4
Brown	481	11.2	24,832	730	34	..	13	20	13	3
[2]Butler	452	12.9	80,054	2,287	35	6	54	84	64	6
Carroll	387	21.5	15,761	875	18	..	4	8	4	2
Champaign	421	7.6	26,351	479	55	1	22	34	28	3
[3]Clark	407	3.8	71,907	665	108	1	42	73	68	5
Clermont	465	8.6	29,551	547	54	..	17	27	14	5
Clinton	411	10.3	23,680	592	40	1	15	26	28	2
Columbiana	534	5.7	82,480	886	93	2	43	55	66	12
Coshocton	558	13.1	30,693	876	35	1	10	23	24	4
Crawford	409	8.5	34,124	710	48	1	21	42	36	12
[4]Cuyahoga	463	0.3	782,179	718	1,089	37	751	965	549	162
Darke	596	8.8	43,225	654	66	..	25	46	56	5
Defiance	405	13.1	24,498	790	31	1	9	16	14	2
Delaware	445	9.9	27,751	616	45	2	10	22	29	4
Erie	256	5.4	38,819	825	47	1	20	30	28	8
Fairfield	495	8.1	42,806	701	61	2	30	44	40	10
Fayette	413	13.3	21,757	701	41	..	12	23	14	5
[5]Franklin	517	0.9	263,253	450	584	13	271	440	297	91
Fulton	405	10.9	24,725	668	37	2	16	21	26	5
Gallia	449	12.7	25,745	715	30	2	11	21	25	3
Geauga	416	29.7	11,670	1,047	14	2	9	9	11	4
Greene	415	8.8	29,733	632	47	2	16	30	34	6
Guernsey	518	10.4	48,767	975	50	..	30	39	33	6
[6]Hamilton	407	0.4	498,143	542	919	42	465	703	481	124
Hancock	535	9.7	37,860	688	55	2	16	32	38	8
Hardin	473	9.1	30,407	584	52	..	15	32	26	6
Harrison	401	13.8	19,076	657	29	1	8	19	21	5
Henry	414	12.5	25,119	761	33	..	11	26	27	5
Highland	549	4.5	28,711	233	123	6	17	85	82	4
Hocking	411	17.1	23,650	985	24	..	12	20	13	2
Holmes	418	18.2	17,909	778	23	..	15	15	13	3
Huron	494	9.7	35,676	697	51	4	22	33	20	7
Jackson	404	15.0	30,791	1,140	27	1	9	18	19	4
Jefferson	407	5.2	80,798	1,035	78	2	35	57	54	16
Knox	513	10.3	31,910	638	50	1	18	29	29	8
Lake	241	6.7	23,835	916	36	2	4	23	22	2
Lawrence	443	10.5	39,488	940	42	..	16	27	27	7
[7]Licking	669	7.3	61,809	975	91	1	33	65	43	11
Logan	451	7.5	30,087	501	60	..	14	34	40	7
[8]Lorain	497	4.8	91,497	889	104	4	43	71	70	15
[9]Lucas	342	0.9	221,318	571	387	10	195	301	234	58
Madison	497	13.4	19,902	537	37	..	14	24	23	3
[10]Mahoning	427	2.3	149,742	805	186	3	141	151	128	38
Marion	409	6.7	37,835	620	61	2	23	41	45	6
Medina	435	13.6	24,795	774	32	..	15	19	25	5
Meigs	412	13.3	25,594	826	31	1	8	20	16	1
Mercer	450	12.8	27,536	786	35	..	11	21	26	4
Miami	408	5.5	46,464	627	74	1	35	48	53	2
Monroe	448	22.4	24,244	1,212	20	..	7	11	13	1
[11]Montgomery	455	1.5	188,300	642	293	8	149	223	176	32
Morgan	402	20.1	16,097	804	20	3	11	11	14	1
Morrow	403	16.8	16,815	700	24	..	6	14	12	3
[12]Muskingum	664	8.3	60,628	757	80	2	26	51	51	10
Noble	399	28.5	18,601	1,328	14	..	5	10	8	2
Ottawa	270	6.2	22,467	522	43	1	9	19	15	3
Paulding	413	17.2	22,730	947	24	..	9	20	20	5
Perry	399	11.1	37,991	1,055	36	..	18	28	23	3
Pickaway	490	12.6	26,158	670	39	..	9	25	24	2
Pike	428	35.7	15,723	1,310	12	..	4	7	10	1
Portage	521	11.1	31,079	661	47	1	11	20	28	4
Preble	416	12.6	23,921	724	33	..	12	19	20	3
Putnam	482	12.7	29,972	788	38	1	19	28	30	4
Richland	503	6.3	50,132	626	80	5	32	51	53	7
Ross	668	12.4	40,069	742	54	1	25	36	34	7
Sandusky	413	10.1	35,798	873	41	1	11	26	28	5
Scioto	623	8.5	53,924	738	73	1	31	57	57	10
Seneca	550	7.8	43,338	619	70	2	29	41	38	10
Shelby	413	10.9	21,690	649	38	2	13	20	19	4
[13]Stark	566	3.0	143,600	767	187	3	85	108	130	12
[14]Summit	408	1.7	134,924	559	241	3	96	108	190	35
Trumbull	623	7.4	57,271	673	85	3	35	59	40	10
Tuscarawas	555	7.9	59,430	849	70	2	22	46	52	8
Union	446	16.5	21,871	810	27	1	15	18	18	4
Van Wert	406	9.0	29,119	647	45	1	17	29	35	7
Vinton	412	31.7	13,096	1,007	13	..	3	10	7	2
Warren	413	9.6	24,497	569	42	2	8	19	31	1
Washington	630	8.2	45,422	589	77	2	14	34	50	8
Wayne	557	9.3	38,195	636	60	2	23	36	36	8
Williams	411	10.3	25,376	634	40	..	11	27	30	3
Wood	612	7.4	46,330	558	83	..	28	57	54	9
Wyandot	406	13.0	20,760	669	31	..	9	17	14	2
Totals	40,750	5.2	5,261,587	673	7,812	218	3,626	5,699	4,758	1,601

1. Includes Lima, population 36,124; physicians 79 [M.R.C. 16].
2. Includes Hamilton, population 41,338; physicians 53 [M.R.C. 5].
3. Includes Springfield, population 52,296; physicians 88 [M.R.C. 5].
4. Includes Cleveland, population 690,837; physicians 1,048 [M.R.C. 151].
5. Includes Columbus, population 220,035; physicians 531 [M.R.C. 89].
6. Includes Cincinnati, population 414,248; physicians 839 [M.R.C. 117].
7. Includes Newark, population 30,317; physicians 51 [M.R.C. 3].
8. Includes Lorain, population 38,266; physicians 34 [M.R.C. 3].
9. Includes Toledo, population 202,010; physicians 372 [M.R.C. 56].
10. Includes Youngstown, population 112,282; physicians 157 [M.R.C. 36].
11. Includes Dayton, population 128,939; physicians 248 [M.R.C. 26].
12. Includes Zanesville, population 31,320; physicians 51 [M.R.C. 7].
13. Includes Canton, population 62,566; physicians 85 [M.R.C. 6].
14. Includes Akron, population 93,604; physicians 189 [M.R.C. 27].

Roy Edwin Fallas; John Aloysius Filak; Paul F. Finch; Giordano Bruno Fliedner; Roy Parsons Forbes; Amos Emanuel Fried; Clermont Friedman.

Francis J. Gallagher; Charles Herbert Garvin; Paul Crankshaw *Gauchat*; Frank Paul Geraci; William C. Gill; Robert Jas. Gillespie; George Frederick Glass; Isadore Jacob *Goodman*; Harold Jackson Gordon; Abraham Benjamin Grossman; Royal George Grossman.

Benjamin I. Harrison; Frederick Cowles Herrick; Rudolph Heym; Frank Ward Hickin; Walter Coit Hill; Merrill Fowler Hosmer.

John Marvin Ingersoll; Theron S. Jackson; Ignatius Edward Jasinski; Arthur Shade Jones; Frank Garrett Jones Jr.; Nathaniel Moore Jones; Thomas E. Jones.

Howard Thomas Karsner; Thomas Richard Kennerdell; Lester Wm. Krauss; Paul Hermann Krebs.

Charles Gerard La Rocca; Walter Magruder Leonard; Henry Allen Lichtig; John E. Linden; William E. Lower; Wm. Price Lowry.

Daniel Marsh MacDonald; *Charles Henry MacFarland Jr.*; Max Mahrer; David Marine; *Nevin Calvin Hayer*; John Maxwell McCleery; Joseph Edgar McClelland; *Norman Percy McGay*; Edgar Paul McNamee; John Amos Meek; Jos. Chas. Monnier; Gordon Niles Morrill; Patrick Sylvester Murphy.

Edward Patrick Neary; Eugene Phillips Neltz; Bernard Benjamin Neubauer; William Schmidlapp *Nicholas*; *Campbell* Freedom George Norlin; James T. T. Norton.

Martin Aloysius O'Brien; Lawrence Nephi Ossman; Lewis Augustav Oster.

Harry V. Paryzek; Leslie Joshua Paul; Roy Gentry Pearce; Harry Doremus Piercy; James Douglas Pilcher; Joseph Charles Placak.

Leonard Robert Ravitz; David Llewellyn Rees; George Hall Reeve; Rudolph Samuel Reich; Franklyn Augustus Rice; Maurice Leonard Richardson; Arthur Ellwood Robertson; William Frederick Rohland; Chas. Lounsbury Ruggles; Harold Oliver Ruh.

Henry L. Sanford; Bruno Jos. Sawicki; Henry Aloysius Schlink; Emmett Chas. Schoolfield; *Rollo J. Shale*; Lorin Guy Sheets; *Leroy B. Sherry*; Herman Shube; Thomas P. Shupe; *Alvin O. Sibila*; Ralph Henry Sill; Roland E. Skeel; Harry G. Sloan; Archibald Alfred Southwick; Anton Benjamin Spurney; John Mattern Steel; Alvin Alexander Stone; *Chas. Walter Stone*; Willard Cyrus Stoner; Abraham Strauss; Arthur L. Stotter.

Harold L. Taylor; Hadley H. Teter; Merthyn A. Thomas; Raymond Lee Thompson; John Wesley Tipple; Oscar Ewing Townsend; Charles *David Treister*; John Poag Tucker; Edward Von Den Steinen.

Harold F. Wagner; Harry Roswell Wahl; Thomas Edward Walker; *Harry Holliday* Ward; Herbert Vance Weibrauch; Robert W. *Williams*; Emil Edward Wolf; James Nicholas Wychgel; Ivan Isaac Yoder; Nicholas *Lee Zinner*.

COLDWATER—Clarence John Schirack. COLTON—George Estus Garwood. LAKEWOOD—Alvah Smith McClain. SOLON—Ralph Blaine Thompson. WARRENSVILLE—Carl Mulky.

WARRENSVILLE—Frank Cornelius Balderrey.

CLEVELAND—Martin Luther Crawford; John Dexter Osmond; James Elmore Randolph.

Darke County

BURKETTSVILLE—Charles Peter Sullivan. GETTYSBURG—Harry Wm. Reck; Joyce Warwick Van Lue. GREENVILLE—Eugene George Husted; Albert Franklin Sarver.

Defiance County

EVANSPORT—Merton Ray Kittredge. JEWELL—Jos. Edward Stephan.

Delaware County

DELAWARE—Floyd V. Miller; Franklin D. Posle; Victor B. Weller. OSTRANDER—Girard Edwin Robinson.

Erie County

HURON—Frederick Morell Houghtaling; Albert Franklin Kuhl. KELLEYS ISLAND—George Washington Manning. SANDUSKY—Henry Graete Jr.; Ferdinand Joseph Leblicq; Parker Fletcher Southwick; Henry Lee Sowash; Ralph Thomas Saunders.

Fairfield County

BREMEN—Carl W. Brown; James Russell Driver. LANCASTER—Clark Gibson Axline; Pinckney Seymour Bone; Charles H. Hamilton; James M. Lantz; John James Silbaugh. STOUTSVILLE—Chas. A. Kefaurer. SUGAR GROVE—Wm. Reed *Coleman*. THURSTON—Chas. Ross Fishel.

Fayette County

JEFFERSONVILLE—John Harold French. SELDEN—Glen Nisley. WASHINGTON C. H.—Henry Alden Baughn; Herman Oliver Hodson; Luther Peterson Howell.

Franklin County

COLUMBUS—Richard Orin Adams; Elmore Ellsworth Adel; Nicholas A. Albanese; James Way Allbritain.

Robert Peter Bausch; Howard Ellsworth Boucher; Frank George Boudreau; Gilbert W. Brehm; Dora V. Burkett.

Edward M. Clark; Kenneth Atkinson Clouse.

Paul Arthur Davis; Dudley T. Dawson; Clarence H. Denser; Verne A. Dodd; Joseph Mitchell Dunn; Nelson Cornelius Dysart.

John B. C. Eckstorm; Samuel David Edelman; Jesse C. Edwards; George Benjamin Faulder; William T. *Fenker*; Jonathan Forman.

Francis Thomas Gallem; Lee Connel Gatewood; Sylvester J. Goodman; Elijah J. Gordon; Fred Browne Grosvenor.

Charles Sumner Hamilton; Forest Clayton Haney; Arthur Merl Hauer; Samuel Hindman; Arthur Handley Hixson; *George Owen* Hoskins; Rae E. Houke; Carl C. Hugger.

Romeo Arsburn Johnson; Daniel Webster Jones; Edgar Burnett Junkermann.

Jay Gould Keiser; Jeremiah Ervin Kerscher; *John Donovan* Kessler; Gerald P. Lawrence; Chas. Seymour Lehner; Edward C. Ludwig; Fred A. Lutz.

Roll *Harrison* Markwith; Chas. Levi Maxwell; Eugene Franklin McCampbell; Charles E. McClelland; John Roy McDowell; Walter Harold McKay; Joseph Dennis McNerney; John W. Means; William Franklin Millho[illegible] Wm. Harries Morgan; *John Herbert Nichols*.

Anton W. *Oelgoetz*; Morse F. Osborn; Claren Emmett Pfeifer; David Patterson Phillips Jr.; Carlton David Postle.

Philip J. Reel; Andrew S. Robinson; Lacky H. Russell; George Christian Schaeffer; John Philip Scheib; *Auston Henry* Seeds; Edwin F. Shaffer; Elgie Raymond Shaffer; *Clark* Edward Sharp; John William Sheetz; Victor Roy Small; Edward E. Smith; Harry H. Snively; Harold Dale Strausbaugh; Timothy Joseph Sullivan.

William Neely Taylor; Robert Amos Thornton; Frank Sherman Van Dyke.

James Halford Warren; Charles *Henry* Wells; Starling Sullivant Wilcox; Frederick Williams; Philip Duncan Wilson; Frank Winders; Earl *Corson* Wood; [illegible] ght. HILLARDS—John Walter Renner. LINDEN [illegible] evine Turner.

COLUMBUS—G [illegible]

Fulton County

[illegible] Murbach. DELTA—Archibald Moltz Wilkins. Th[illegible] Valentine Evers. WAUSEON—Carl Floyd Ha[illegible] Maddox.

Gallia County

GALLIPOLIS—Everett Humphreys Morgan; Edwin Jehu Rose. VINTON—John William Clark.

Geauga County

BURTON—Theodore Frederick Myler. HUNTSBURG—Albert Dwight Williams. MONTVILLE—Amo Edward Bohm.

BURTON—Nell Avon Dayton.

Greene County

CEDARVILLE—Simpson Alexander Smith. NEW BURLINGTON—Harry Osborne Whitaker. XENIA—William Turner Darnell; Benjamin R. McClellan; Harold Clay Messenger; Lawrence Shields.

Guernsey County

BYESVILLE—Virgil Harrison Danford. CAMBRIDGE—Fred Warfield Lane; Harold Robbins Neeland. LORE CITY—Alexander Robert John*son; Chas. Francis Shively. SENECAVILLE—Carroll Hallam* Skeen.

Hamilton County

CINCINNATI—Matthew M. Applegate; Joseph Chas. Aub; Arthur C. Bachmeyer; Ellis Robert Bader; Edmund Michael Baehr; Earl Elias *Baker*; *Chas.* Worcester Beaman; Julien E. Benjamin; James Magee Bentley; Clarence Wilford *Betzner*; *Oscar B. Biern*; Herbert Adolph Brown; James S. Brummett; Julian Holt Buff.

John A. Caldwell; Ralph Goldsmith Carothers; Alfred Peter Coles; Louis Alexander Cornish; Harry Clifford Cragg; Frank Bradley Cross.

De Enna Darrell De Neen; John Benedict Doyle; Charles S. Dryer; Allen Henry Dunton.

Charles Kenneth Ervin; Jacob Benjamin Falk; Emmett Fayen; Adolphus William Foertmeyer; Starr Ford; Robin William Cummins Francis; Albert H. Freiberg; William Louis Freyhof; Alfred Friedlander.

Raymond Erastus Gaston; *Albert* Connell Geringer; Rudolph Jacob Gieseler; William Gillespie; Edward Benjamin Gray; Claude D. Greene.

John Stewart *Hagen*; *Claude Edwin Hale Jr.*; Joseph A. Hall; Daniel Crumlick Handley; Ralph W. *Hardinger*; Walter H. *Hatfield*; Selmar *Frederick Hauser; Lewis Wade Helser; Frank W. Hendley*; Peter Hofmann Christian Rasmus Holmes; Nathan Hale Keller; Charles Edward Kiely; Edward King; Arthur E. Koch; *Edward* Kuck.

Benjamin H. *Lamb*; William Lee Layport; Duke Lee; Benjamin Franklin Lehman; Lauren Norton *Lindenberger*.

Robert D. Maddox; Charles Maertz; Leo Rudolph Majoewsky; Anthony Matuska; Merrick Fiefield McCarthy; Edwin Robert McGrath; George Tracy Mehan; *Charles W. Metz*; Louis A. Molony; Roger S. Morris.

Arthur Edwin Osmond; Franklin Johnson Owry; Russell H. Paden; Marcellus Leroy Peterson; Joseph Edward Pirrung; Philip Wilfred Place.

Louis Alfred Querner; *Henry Benjamin Raman*; *Joseph L.* Ransohoff; *Thomas A.* Ratliff; Goodrich Barbour Rhodes; Everett Chaney Robbins; Dennis Rupp.

Robert Ray Sattler; Frank Joseph Sauer; Louis Howard Schriver; Charles Cornelius Shearer; Albert Freeman Snell Jr.; Sylvan Eppinger Sommer; Charles Thaddeus Souther; *John D. Spelman*; *Ralph* Witt Staley; Henry Stanberry.

Horace Fred Tangeman; Neil Edison Taylor; Leon G. Tedesche; Silas Paul Tharp; William Joseph Topmoeller; David Andrew Tucker Jr.

Martin Harley Urner; Rufus A. Van Voast; Howard Jefferson Ware; *Charles Henry* Weintz; *Andrew* Louis West; *Marion* Whitacre; Henry Lynde Woodward; Paul Gerhardt Wooley; Louis Claud Wottring; Samuel Zielonka. ELMWOOD PLACE—Byron Hubern Nillaus. GLENDALE—Rufus Southworth. HARRISON—[illegible] g; Ralph Booth Tate. [illegible] EADING—Alvin Henry [illegible]

CIN[illegible] s; Henry Melvin Le[illegible] Ralph Henry Vance; [illegible] *ss.*

Hancock County

FINDLAY—Alfred Wickham Balsley; Edwin *Harold* Coopers; John Meeks Firmin; John Van Horn Hartman; Warren Brown Keator; P. C. Pennington; Allison Moore Van Horn. McCOMB—Calvin Deverde Todd.

Hardin County

ALLEN—Newton Wisely Jr. KENTON—Leroy Lorin Belt; Frank Baker Snodgrass. McGUFFY—Roy K. Evans. MT. VICTORY—Elmer Ellsworth Lynch.

KENTON—John D. Nourse.

Harrison County

[illegible] Black. HARRISVILLE—James Clark [illegible] Lee Thompson. NEW ATHENS—James [illegible] Walter Wilford Hall Curtiss.

Henry County

DESHLER—Orra Lee Norris. HOLGATE—Julius Ralph Bolles; James Franklin Earp. McCLURE—Irwin Henry Boesel. NAPOLEON—Charles Meigs Harrison.

Highland County

GREENFIELD—James Delmar Varney. HIGHLAND—John Loren McAlister. HILLSBORO—Henry M. Brown. NEW PETERSBURG—William *Harris Ambrose*.

Hocking County

LOGAN—Claud C. Lyon. MURRAY—Edwin Henry Hayman.

Holmes County

KILLBUCK—Frederick Parsons Purdy. MILLERSBURG—Atlee *Ross* Olmstead; Isaac Smith Putnam.

Huron County

BELLEVUE—Charles Lee Harding. FITCHVILLE—Clement *Laird* Valandigham Bell. MONROEVILLE—Benjamin Charles Pilkey. NEW LONDON—James Walter Reese. NORTH FAIRFIELD—Angus Alexander MacIntosh. NORWALK—James Durfey *Coupland*; Robert C. Gill.

Jackson County

JACKSON—Halder L. Gahm; Johnson Sherman Hunter. WELLSTON—Daniel William Davis; William Hadley Parker.

Jefferson County

AMSTERDAM—Zeddock Atwell. MINGO [illegible]—Thomas McElroy. MT. [illegible] Blake Wittle [illegible] Wilso[illegible] [illegible]—John R. [illegible] Willia[illegible] Kester Bl[illegible] DeMarr Erskine; Charles Walter Maxso[illegible] Russell Montgomery; Silas Warren Saxto[illegible] rison. TORONTO—George A. Ferguson. [illegible] Donehoo.

RAYLAND—John R. Caldwell.

Knox County

FREDERICKTOWN—John Howard Norrick. MT. VERNON—John B. Claypool; Carroll Dunham Conard; Edward Darwin Downs; Charles Herndon Haralson; Josiah Merton Pumphrey; William Cooper Russell; Samuel Workman.

Lake County

MADISON—Julian Vern Winans. PAINESVILLE—James Roy Davis.

Lawrence County

IRONTON—Edward Crescentus Goldcamp; Oscar Henry Henninger. PEDRO—Orlyn Wiseman. ROCK CAMP—John Henry Ramey. SCOTT TOWN—Irwin William Mayberry. *SHERRITTS—Forrest Ray Stewart.* SOUTH POINT—George W. King.

Licking County

[illegible] Dayton Bishop; Edgar Harvey Johnston. [illegible] Cook. HEBRON—Charles George Bozman. [illegible] [illegible]att; Raymond Charles Mauger. NEWARK—Reaves Warren De Crow; Louis Albert Mitchell; Victor Roland Turner. ST. LOUISVILLE—Lora Marason Marriott. UTICA—Edward M. Cass.

Logan County

BELLEFONTAINE—William Hamilton Carey; Arthur James McCracken; Robert Boyd Pratt; Clyde Kress Startzman; Guy Howard Swan. EAST LIBERTY—William Claude Davis. WEST LIBERTY—James Wilson Croft.

Lorain County

AMHERST—Bryce Alfred Miller. ELYRIA—George Gill; William Emilius Hart; William Bowler Hubbell; Frank Alvin Lawrence; Julius Caesar Kramer; Henry M. Metcalf; Edwin Elmer Sheffield; Arthur Bushnell Smith. LORAIN—William Frederick Dager; Theo. James Kasinski; Otto Mikolanda. NORTH RIDGEVILLE—Russell Adelbert Pease. OBERLIN—Carroll Lawrence Storey. WELLINGTON—Frank Benham Gregg.

Lucas County

MAUMEE—Roswell William Comstock.

TOLEDO—Madison G. Baldwin; Walter Waldo Beck; Kurt C. Becker; Horace Kurtz Beckwith; James A. Belyea; Harry Albert Bennett; Clarence A. Berger; Squire S. Beverly; George Bertram Booth; Ray Burton Bowen; Thomas Hartwell Brown; Burt George Chollett; Claud Bertrand Cole; William W. Conger; Fred L. Eystone; Charles Faber; Frank D. Ferneau; Frank Baker Ficklin; Karl Dean Figley; Sidney Dix Foster; Morris W. Gillette; Adolph J. Girardot; Lucius Barnes Goodyear; Jay Maurice Harrison; John Howard Harvey; Barney James Heth; George A. Hettler; Thomas Francis Higgins; Arthur Hadley Hixson; Daniel W. Hord; Philip M. Johnson; Peter Everett Kern; Robert E. Lawless; Edward James McCormick; Murray B. McGonigle; Hoyt Breen Meader; Lawrence Delano Miller; Daniel Cook Moor; Carl Seymour Mundy; Frank Lewis Newburg; Frank William Pilliod; Henry Levi Price; Owen County Rees; Fred Lawville Rhodes; William Alfred Ricard; Philip William Rieg; Herman George Rosenblum; August H. Schade; William Mordecai Shapiro; Charles G. Souder; Willard John Stone; William Henry Strathman; Philip D. Werum; Grattian Philips Whitwham; Howard William Williamson; Dale Wilson. WHITEHOUSE—Harry Stone Hayes.

Madison County

LILLY CHAPEL—George McC. Kerr. LONDON—Harry V. Christopher; John W. Parker.

Mahoning County

EAST YOUNGSTOWN—Francis Percival Fitzpatrick. STRUTHERS—Ray William Fenton. YOUNGSTOWN—Clarence D. Barrett; Frederick J. Bierkamp; William McGranahan Blaine; Albion Earl Brant; Edward Jay Braun; John Ure Buchanan; William Hall Bunn.

Colin R. Clark; Earl W. Ciffe; George Dubarry Dunn; Jos. F. Elder; Alfred Paul Hancuff; Maurice Paxton Jones.

James Sidney Mariner; Max Marowitz; Sidney Morrill McCurdy; Francis Wallace McNamara; Nathan Nissau Meyer; Ralph Richard Morrall; Charles Francis Morris; Charles Howard Moses.

Dean Abbott Nesbit; George S. Nutt; George W. O'Grady; Henry Manning Osborne; Albin Morse Painter; David Barringer Phillips; Wesley Cornelius Redd; Colin McFarquhar Reed; James A. Sherbondy; David Nebrenk Smeltzer; Arthur William Thomas; Everett Raymond Thomas; Walter B. Turner; John Lewis Washburn; Charles Christian Woolferth.

Marion County

CALEDONIA—Brett Battrick Hurd. LA RUE—Donald Da Sosta Shira. MARION—Jacob Murray Hoskins; Sheridan Waterman Mattox; Walter Jabez Weiser.

MARION—Clifford George Smith.

Medina County

MEDINA—Roy G. Strong. SEVILLE—John Loveless Beach; Roy Arthur Brintnall. VALLEY CITY—Alexander G. Appleby.

MEDINA—Hiram Paul Hugus Robinson.

Meigs County

LETART FALLS—Herman L. Crary.

Mercer County

CELINA—Frank Edwin Ayres; John Tipton Gibbons. FT. RECOVERY—William Adam Lieser. ROCKFORD—James Oscar Wickerman.

Miami County

PIQUA—Michael Robert Haley; Francis Willard Thomas.

Monroe County

JOLLY—Carl Eugene Edwards.

Montgomery County

DAYTON—Robert Carlton Austin; Charles O. Bayless; Harry Webster Burnett; Arthur Ward Carley; Carl Lane Cline; Chelsea Austin Coleman; John Cecil George; Guy C. Giffen; A. E. Hewitt; Fred E. Kislig; Walter Lee Kline; Harold Fredk. Koppe; John Kingborn Lawson; William R. Mansur; Albert Ward McCally; Harry Hugo McClellan; John William McKemy; William O. Roop; Frederick C. Rounds; Frank Lyon Salisbury; Henry Anthony Springer; Leonard [illegible]; Thomas E. Walkup; Ralph LeMoyne Woodruff. [illegible] n Hunt. NAT'L. MIL. HOME—Francis Euge[illegible] Grover; Clinton Gallagher Lyons Jr.; Neely [illegible] Joseph Vega.

DAYTON—Franklin Winbert Roush; Homer Hamilton Williams.

Morgan County

McCONNELSVILLE—John Frederick Hill.

Morrow County

CARDINGTON—Walter S. Bennett. EDISON—Charles Salo Jackson. IBERIA—Delphus Brown Virtue.

Muskingum County

[illegible] Ellsworth Wells. NEW CONCORD—John Gregory [illegible] [illegible]urice Loebell. ZANESVILLE—Stanley Lincoln [illegible] Brush; Charles Henry Higgins; Harry Marion Rambo; Charles James Roach; Charles Philip Sellers; Alvin E. Walters.

Noble County

BELLE VALLEY—Frank Raymond Dew. CALDWELL—Ellis Dyson Kackley.

Ottawa County

PORT CLINTON—Carlton Culley Starkes; John Arthur True; Owen Payard Van Epp.

Paulding County

LOTTY—Ambrose Henry Mouser; Ray Henry Mouser. PAULDING—Leo Roy Fast. PAYNE—Clarence Henry Hyman; John Charles Miller.

Perry County

CORNING—Neville H. McNerney. CROOKSVILLE—Edgar Dempsey Allen. *SANTOY—John Rush Warren.*

Pickaway County

ASHVILLE—Harold Vieman Postle. CIRCLEVILLE—Harry D. Jackson.

Pike County

PIKETON—Isaac Preston Seller.

Portage County

KENT—Bradner Earl Gorham. RAVENNA—Worth Tyndall Gatchell; Bernard Henry Nichols; Lucius Warner Prichard.

Preble County

CAMDEN—Jerrard Willard Coombs. EATON—Horatio Zimmerman Silver. MORNING SUN—William Thomas Stewart.

Putnam County

KALIDA—John Denver Siddall; John Davis Watterson. OTTAWA—Otto James Owens; Benjamin Rappaport.

Richland County

BELLEVILLE—Caris Todd. MANSFIELD—Samuel Edwin Findley; Wayne Perry Mecklem; Edward Remy Jr.; George Chauncey Smith. PLYMOUTH—John Franklin Holtz. SHELBY—William Andrew Smith.

Ross County

CHILLICOTHE—Abraham Henry Dunn; Ralph Williams Holmes; Roy Baldwin Wynkoop. FRANKFORT—Warde Byron Smith; Lewis Martin Tinker. KINGSTON—Charles Cyrus Hatfield; Russell Eugene Lightner.

Sandusky County

CLYDE—Edwin A .Baker. FREMONT—William Ray Deemer; Sherman McKenny. GIBSONBURG—Albert Griffith Eyestone. WOODVILLE—Harvey Newell Trumbull.

Scioto County

NEW BOSTON—Alfred B. Mills. PORTSMOUTH—Challis Haddon Dawson; Herbert Morris Keil; David H. McCall; George Sylvester Mytinger; William Alexander Quinn; Harry F. Rapp; Joseph S. Rardin; Orin Worrett Robe. SCIOTOVILLE—Carl Herman Graf.

Seneca County

FOSTORIA—Arthur John Fletcher; Harold Edgar Fruth; Virgil Jaye Fruth; Nathan Cleveland Hatfield; Addison Hayes Hattery; Charles Augustus Henry Jr.; William Leonard; Cecil James Johnston; Floyd Samuel Mowrey. TIFFIN—Henry Lee Wernner Jr.

Shelby County

ANNA—Bennie Logan Englerth. SIDNEY—John Franklin Conner; Vernon Walker LeMaster; Arthur Silver.

Stark County

ALLIANCE—Benjamin C. Barnard; Homer Garfield Scranton. CANTON—Claude Dewes Hamilton; James Gerard Kramer; John Daniel O'Brien; Chester Moore Peters; Raymond B. T. Sweany; Joseph Llewellyn Todd. MASSILLON—Parker G. Borden; Joel Dubois Holston; John Hamilton Murray.

MINERVA—Lee E. Casey. NEW BERLIN—James Benjamin Dougherty.

Summit County

AKRON—Richard Ellison Amos; Henry E. Baremore Jr.; Edward W. Barton; Lucien Daniel Clark; Roy F. Drury; William Lyman Fox; Benjamin Harrison Gillespie; Jesse Grim; Howard R. Heckert; Ralph Samuel Hosler; Leroy Bromwell Humphrey; George Morrison Logan; Roy Vincent Luce; Orrin Clark McDowell; Harvey Huston Musser; Charles Clifford Pinkerton; Robert Swinton Postle; Ralph Edgar Powers; Fred Karl Read; Vest D. Reichelderfer; Everett T. Skeels; Carl Cleveland Smith; James Edward Stewart; Joseph Nathias Ulrich; Cloyd Frank Wharton; John H. Weber. BARBERTON—Walter Ernest Dapf; Germanus Elvery Gardner; Herbert A. Rodenbaugh; Howard Lee Smallman. COPLEY—Percy Burdett Long. CUYAHOGA FALLS—William Alonzo Searl. KENMORE—Earl Z. Alspach; Sydney Jerome Havre.

AKRON—Smith Elliott McAdoo.

Trumbull County

BRISTOLVILLE—Jesse Eugene Thompson. GIRARD—Fred Charles Hunt. HUBBARD—Thomas Angelus Minaham Jr. KINSMAN—Luman Gordon Moore. NILES—Curtis Carrington Williams. WARREN—Melville S. Darwin Ailes; Delbert Elias Hoover; Moses T. Knappenberger; Wi[illegible] Cha[illegible]s; Chester Curtis Waller.

Tuscarawas County

DENNISON—Roy A. Wilson. DOVER—Burt Allen Marquand; Max Shaweker. NEWCOMERSTOWN—Rollin Andrew Goudy. NEW PHILADELPHIA—Harrison Arthur Coleman; Kenneth Earl Shauwecker. URICHSVILLE—Henry Allan Back; Gale Clevenger Guthrie.

Union County

MARYSVILLE—William Mitchell Goff; Angus Maciver. MILFORD CENTER—John Dean Boylan. RICHWOOD—Roy Francis Jolley.

Van Wert County

OHIO CITY—Murray Emerson Reeder. SCOTT—Myron Hanna. VAN WERT—Charles G. Church; Robert Cornelius Flemming; Nolan Eugene Leake. WILSHIRE—Walter Curtis Roller. WREN—Francis Erastus Reed.

Vinton County

HAMDEN—William Herbert Henry. McARTHUR—Thurman Bishop Haas.

Warren County

MORROW—Clifford Paul Krohn.

Washington County

MARIETTA—Edgar Ward Hill Jr.; Walter William McMillan; James Brinton Penrose; William Walter Sauer; Timothy Gibson Sellew; Arthur Howard Smith; Harold Henry Theis. NEWPORT—Larry R. Gale.

Wayne County

DALTON—Charles Ross Deeds. ORRVILLE—Marion A. Blankenhorn; Donald Murphy Blizzard. SHREVE—Harry B. Bertollette; Kromer Columbus Ice. WEST SALEM—Milton Bronner Cohen. WOOSTER—Thomas Foster; Thomas Arthur Graven.

Williams County

BRYAN—James Wilkinson Long; Franz Emory Solier. EDGERTON—George Russell Curl.

Wood County

BOWLING GREEN—Frank V. Boyle; George Albert Gorsuch; Arthur M. Harrison; James W. Rae; Frank Atwater Stove. CUSTAR—Ivan Lester Biggs. GRAND RAPIDS—Earl Fray Peinert. PRAIRIE DEPOT—Lewis Richard Carr. WESTON—J. Cliff Wetherill.

Wyandot County

CAREY—Robert Carl Van Buren. UPPER SANDUSKY—J. Craig Bowman.

OKLAHOMA STATE MEDICAL ASSOCIATION

Officers 1917-18

W. Albert Cook, *President*	*Tulsa*
McLain Rogers, *First Vice President*	Clinton
G. F. Border, *Second Vice President*	Mangum
Horace Reed, Third Vice President	Oklahoma City
Claude A. Thompson, *Secretary*	Muskogee

Councilor Districts and Officers

First District—Beaver, Cimarron, Ellis, Harper, Texas, Woods and Woodward *counties.* J. M. Workman, Councilor, Woodward.

Second District—Beckham, Blaine, Custer, Dewey, Roger Mills and Washita counties. Ellis Lamb, Councilor, Clinton.

Third District.—Comanche, Cotton, Greer, Harman, Jackson, Kiowa and Tillman counties. G. P. Cherry, Councilor, Mangum.

Fourth District—Alfalfa, Garfield, Grant, Kay, Major and Noble counties. G. A. Boyle, Councilor, Enid.

Fifth District.—Canadian, Kingfisher, Logan and Oklahoma counties. F. Y. Cronk, Councilor, Tulsa.

Sixth District.—Caddo, Garvin, Grady, Jefferson, McClain and Stephens counties. C [illegible] Councilor, Waurika.

Seventh [illegible] skee, Okmulgee, Osage, Pawnee and Tulsa count[illegible] Councilor, Tulsa.

Eighth District.[illegible] Lincoln, Payne, Pottawatomie and Seminole counties. H. M. [illegible] Welston.

Ninth District.[illegible] nston, Love, Marshall, Murray and Pontotoc counties. [illegible] ncilor, Sulphur.

Tenth District.—Craig, Delaware, Mayes, Mowata, Ottawa, Rogers and Washington counties. R. L. Mitchell, Councilor, Vinita.

Eleventh District.—Adair, Cherokee, *Haskel, McIntosh,* Muskogee and *Wagoner counties.* J. Hutchings White, Councilor, Muskogee.

Twelfth District.—Hughes, Latimer, Leflore, Pittsburg and Sequoyah counties. Ed D. James, Councilor, Miami.

Thirteenth District.—Atoka, Bryan, Choctaw, McCurtain and Pushmataha counties. J. L. Austin, Councilor, Durant.

HONOR ROLL

Adair County

STILLWELL—Samuel Ray Evans. WESTVILLE—David Albert Beard.

Alfalfa County

BRYON—George Gano Harris. CARMEN—Roscoe Ratliffe Aulick; Walter Henry Dersch; John Evans Heatley. INGERSOLL—Ester Lee Jones.

Atoka County

STRINGTOWN—Charles Clarence Ross.

Beaver County

GATE—George Andrew Nyland.

Beckham County

ELK CITY—Glenn Luther Harker. ERICK—Robert Charles McCreery.

Blaine County

CANTON—Frank Reitz Buchanan.

Bryan County

DURANT—John H. Kay.

Caddo County

ANADARKO—Parkey Howard Anderson; Samuel T. Campbell; Milton Henry Edens; Reuben Worrell Williams. CYRIL—George Bonnas *Coker.* EAKLY—Claude Eugene Putnam. *GRACEMONT*—Earle Smith; James William Wheeler.

OKLAHOMA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Adair	587	53.4	14,201	1,291	11	..	6	11	8	2
Alfalfa	867	23.3	23,478	903	26	..	15	21	13	5
Atoka	997	76.8	18,185	1,398	13	..	8	9	2	1
Beaver	1,813	120.9	14,320	954	15	..	7	9	2	1
Beckham	917	41.7	24,710	1,123	22	..	12	17	16	2
Blaine	931	54.8	19,853	1,167	17	..	12	16	14	1
Bryan	928	16.3	34,988	613	57	..	31	34	33	1
Caddo	1,377	30.6	49,742	1,105	45	..	27	35	33	7
Canadian	891	27.8	32,256	1,008	32	1	14	26	17	4
Carter	831	16.6	25,358	507	50	1	22	38	29	3
Cherokee	791	52.7	23,245	1,549	15	..	8	11	10	4
Choctaw	790	21.3	33,539	906	37	..	23	27	14	3
Cimarron	1,849	924.5	4,553	2,276	2	..	1	1	..	..
Cleveland	554	17.9	19,832	639	31	..	18	22	15	9
Coal	525	25.0	16,416	781	21	..	9	13	13	2
Comanche	1,726	45.4	41,721	1,097	38	1	23	34	27	11
Cotton	652	38.3	24,946	1,467	17	..	10	13	6	1
Craig	757	23.6	23,727	741	32	..	16	19	16	5
Creek	962	12.5	46,513	604	77	2	39	63	25	8
Custer	998	49.9	35,504	1,775	20	2	13	17	15	2
Delaware	794	113.4	15,582	2,226	7	..	5	7	..	..
Dewey	989	52.0	16,205	852	19	1	9	14	4	2
Ellis	1,218	87.0	18,981	1,355	14	2	6	10	5	2
Garfield	1,661	18.3	45,314	781	58	1	26	40	34	6
Garvin	821	20.5	36,248	906	40	..	18	30	27	4
Grady	1,024	21.8	48,097	1,023	47	..	27	36	28	5
Grant	994	39.8	21,658	866	25	1	11	16	9	2
Greer	644	32.2	22,791	1,139	20	..	15	16	19	3
Harmon	548	36.5	15,701	1,046	15	..	8	13	11	2
Harper	1,033	114.8	8,448	938	9	..	6	7	4	2
Haskell	615	47.9	24,066	1,093	22	..	15	21	13	5
Hughes	855	21.9	34,615	810	39	..	21	23	9	3
Jackson	778	25.1	40,908	1,319	31	..	17	23	27	5
Jefferson	767	28.4	27,735	1,027	27	..	12	18	13	2
Johnston	658	22.7	16,734	577	29	..	15	19	13	1
Kay	934	21.7	32,788	762	43	..	20	30	16	4
Kingfisher	890	37.1	20,931	872	24	..	8	17	8	3
Kiowa	1,179	34.7	41,158	1,210	34	1	16	25	23	9
Latimer	735	56.5	16,436	1,264	13	..	4	7	9	1
Le Flore	1,614	33.6	40,615	846	48	..	29	41	22	4
Lincoln	950	27.9	34,779	1,022	34	..	20	29	16	5
Logan	739	15.7	34,397	731	47	2	18	27	16	5
Love	496	31.0	10,236	639	16	..	8	13	3	2
McClain	562	33.0	22,814	1,342	17	..	8	12	6	1
McCurtain	1,897	48.6	40,001	1,025	39	..	18	28	18	2
McIntosh	661	19.4	28,671	843	34	1	14	24	18	3
Major	937	59.2	17,678	1,104	16	2	7	8	4	..
Marshall	419	16.7	11,619	464	25	..	15	20	15	2
Mayes	676	12.7	20,135	379	53	1	9	19	12	4
Murray	424	22.3	14,799	778	19	..	4	10	11	2
[1]Muskogee	814	7.5	92,188	845	109	5	69	80	54	17
Noble	734	45.9	16,874	1,054	16	..	9	13	9	3
Nowata	586	23.4	23,957	958	25	..	11	18	15	2
Okfuskee	623	23.1	31,356	1,161	27	..	12	18	13	..
[2]Oklahoma	717	3.2	161,101	712	226	7	126	180	118	47
Okmulgee	679	10.6	38,553	602	64	1	33	51	32	8
Osage	2,277	79.2	32,414	1,121	20	..	14	22	13	2
Ottawa	477	10.6	23,165	514	45	..	14	39	26	2
Pawnee	584	23.8	17,900	716	25	..	11	18	9	4
Payne	678	19.4	28,158	804	35	..	18	23	17	2
Pittsburg	1,370	25.3	73,400	1,265	58	3	38	52	30	8
Pontotoc	728	19.6	27,619	746	37	2	18	35	25	4
Pottawatomie	793	13.4	44,428	753	59	1	27	47	38	7
Pushmataha	1,430	102.1	14,825	1,058	14	..	8	9	3	..
Roger Mills	1,135	94.7	12,861	1,071	12	..	8	11	9	..
Rogers	730	18.2	23,546	588	40	..	17	32	30	3
Seminole	633	24.3	33,588	1,291	26	..	13	21	8	1
Sequoyah	693	23.8	31,475	1,085	29	..	15	26	14	3
Stephens	897	24.9	27,684	769	36	2	12	18	25	2
Texas	2,065	121.5	14,249	838	17	..	8	18	5	3
Tillman	733	22.9	33,576	1,049	32	..	14	27	22	3
[3]Tulsa	565	3.9	69,341	474	146	2	84	126	97	16
Wagoner	545	22.6	28,689	1,195	24	1	14	17	15	1
Washington	425	12.1	29,544	844	35	2	16	36	21	8
Washita	1,006	41.9	32,848	1,335	24	..	13	16	20	1
Woods	1,255	73.8	22,858	1,344	17	1	8	12	14	2
Woodward	1,233	53.6	21,746	945	23	..	11	19	17	6
Totals	70,069	26.6	2,315,180	866	2,672	47	1,366	2,001	1,432	377

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1. Includes Muskogee, population 47,173; physicians 78 [M.R.C. 16].
2. Includes Oklahoma, population 97,588; physicians 206 [M.R.C. 45].
3. Includes Tulsa, population 32,507; physicians 120 [M.R.C. 11].

Canadian County

EL RENO—Fred H. Clark; Philip Frickelton Herod; Ontie Horenden; Daniel Miller Moore.

Carter County

ARDMORE—David Albertus Gregory; George Bennett Scott. HEALDTON—Charles Crawson Sims.

Cherokee County

PARK HILL—John Frank Duckworth. TAHLEQUAH—Houston E Fite; Charles Arthur Peterson; Joseph Martin *Thompson.*

Choctaw County

HUGO—Edgar Allen Johnson; Henry Whitfield Malers. SOPER—Thomas Anderson Hartgraves.

Cleveland County

LEXINGTON—Clarence Edward Northcutt; John Lestrange Bock; Robert Edward Lee Thacker. NORMAN—Thomas Nadison Boyd; *John Le*[illegible] Day; James Jackson Gable; Stephen H. Graham; Reuben Morgan Hargrove; Richard Emmett Thacker.

Coal County

COALGATE—Finis Ewing Rushing. TUPELO—William Thomas Blount.

Comanche County

CHATTANOOGA—William Brown Harned; George E. Kerr. FAXON—Chonner Polk Chumley. FT. SILL—William P. Lipscomb. LAWTON—George Stanley Barber; Jackson Brashear; Joseph T. Edward; James Garfield Janney; James Lang Lewis; Louis A. Milne; Cecil Elbert Tolle.

Cotton County

TEMPLE—Charles Watts Alexander.

Craig County

VINITA—Louis Bagby; Powell Lambert Hays; Will Wilson Jackson; Walter Roscoe Marks; Robert Lee Mitchell.

Creek County

BRISTOW—Joseph J. Nabhan. DRUMRIGHT—Charles Dallas Blachley; Matthew Karasek; William Penn Sims; Orange Walter Starr. KELLYVILLE—Isaac Walter Rogers. MILFAY—Levi P. Murray. SAPULPA—Erskine D. Johnson.

Custer County

CLINTON—Monte Cristo Comer. THOMAS—William Joseph Omer.

Dewey County

OAKWOOD—Esley Elwood Lawson. VICI—Charles Edward Houser.

Ellis County

ARNETT—Albert Alonzo Stoll. FARGO—Fred Lindley Patterson.

Garfield County

ENID—Wallace Andrew Aitkin; Lyman Lyndon Bunker; Frank Glenn Francisco; Charles Edward Thompson. HUNTER—*Waldo* Bee M. B. Newell. LAHOMA—Harry Fitzgerrell Vandiver.

Garvin County

LINDSAY—Samuel Warren Wilson. PAULS VALLEY—Calvin Luther Johnson. STRATFORD—Marion McDowell Webster. WYNNEWOOD—Robert Lee Baker.

Grady County

BRADLEY—William R. Barry. CHICKASHA—Harry Clifford Antle; Lewis Edgar Emanuel. VERDEN—George Madison McVey; Woodward Roberts Mitchell.

Grant County

BALKO—William Stout. WAKITA—William Emery Harrington.

Greer County

GRANITE—Thomas Junior Nunnery. MANGUM—Rufus Leroy Holt; *Frank Harrison McGregor.*

Harmon County

GOULD—William G. Husband. LOUIS—Oscar Johnston Street.

Harper County

CHARLESTON—Elmer Ethelbert Heady. ROSTON—Hardin Walker.

Haskell County

ENTERPRISE—Jarrett Jeffrey Billington. KINTA—Jesse Ray Waltrip. STIGLER—Frank A. Fannin; Samuel Erskin Mitchell; Harry James Sims.

Hughes County

DUSTIN—Jesse William Smith. LAMAR—Georgia M. Combest. WETUMKA—Casper A. Hicks.

Jackson County

ALTUS—James Jackson Caviness; Raymond H. Fox; Davy Lewis Garrett; Samuel Houston Landrum. BLAIR—Herman August Laforce.

Jefferson County

HASTINGS—Henry DeWitt Shankle. RYAN—Lisby Lucius Wade.

Johnston County

CONNERVILLE—William J. Rogers.

Kay County

BLACKWELL—Alonzo Pit Gearhart; James Clinton Hawkins. NEWKIRK—Abraham Lincoln Hazen. TONAWA—Ethan Estey Waggoner.

Kingfisher County

CASHION—James Robert Bost; Francis Ray First. KINGFISHER—John Winston Pendleton.

Kiowa County

COOPERTON—Paul Raymond Siberts [illegible] m Watkins. [illegible] Clay I [illegible] Henry Calvin [illegible] VIEW— [illegible] Rea.

Latimer County

WILBURTON—Garnett A. Kilpatrick.

Le Flore County

HOWE—Arthur Guy Hunt. POTEAU—Novel Walter Campbell. SPIRO—George Ewin Hartshorne. TALHINA—Robert Melvin Shepard.

Lincoln County

CHANDLER—James Elston Adams; Walter Griswold Bisbee. DAVENPORT—Ulus Edgar Nickell. KENDRICK—Joseph Mitchell Hancock. SPARKS—Frederick C. Brown.

Logan County

GUTHRIE—William Ward Rucks; Thomas H. Wright. MARSHALL—Henry Charles Tyler Richmond. WIRT—Thomas Maxwell Toler.
GUTHRIE—Robert Elliott Long.

Love County

MARIETTA—Alfred Edwin Martin. THACKERVILLE—William Wesley Lightfoot.

Marshall County

KINGSTON—Orange Elbert Welborn. WOODVILLE—James Allen Rutledge.

Mayes County

PRYOR—Joseph William Garrett; Carl Puckett; George Washington Tilly; William Jerry Whitaker.

McClain County

WASHINGTON—Ernest Ezra Nunnery.

McCurtain County

BROKEN BOW—Clarence Randle McDonald. OAK HILL—William G. Baird.

McIntosh County

CHECOTAH—Alexander Boyd Montgomery. EUFAULA—Daniel Erastus Little; John Norris Shaunty.

Murray County

SULPHUR—Howson Clark Bailey; William Medwin Tucker.

Muskogee County

MUSKOGEE—Benjamin Henton Brown; Albert Nila Earnest; William Otto Fischer; William P. Fite; James Grady Harris; Charles William Heltzman; Roland Howlin Holcombe; Edward David Morrison; Robert William Motley, Pleasant Pomeroy Nesbitt; Joseph Glass Noble; Joseph Hoy Sanford; Charles Ersey Smith; Joseph Harry Stolper; Claude A. Thompson; Floyd Edward Waterfield. WEBBERS FALLS—Eugle A. Campbell.

Noble County

BILLINGS—James Marshman Cannon; Thomas Franklin Renfrow. REDROCK—Charles Percy Murphy.

Nowata County

ALLUWE—John Gordon Thomas. NOWATA—Russell Lenoir Kurtz.

Okfuskee County

OKEMAH—Jesse Monroe Pemberton.

Oklahoma County

EDMOND—Samuel Newton Stone. OKLAHOMA CITY—Frank Marion Bailey; Archie Bee, Abraham Lincoln Blesh; Floyd J. Bolend; Rex George Bolend; Charles Arthur Brake; Frederick Albert Cochran Jr.

Albert Ewing Davenport; Francis Asbury DeMand; Robert Berry Gibson; Austin Lee Guthrie; James Worrall Henry; Albert Clifford Hirshfeld; Merle Quest Howard; Robert Mayburn Howard; George Hunter.

Lewis E. Inman; Benjamin George Jones; Wann Langston; Thomas LeRoy Lauderdale; Clarence Edward Lee; Ross David Long.

John Charles Mahr; Aelphar A. Marstellar; George Davidson McLean; John Z. Mraz; Littleton Alexander Newton; David Dare Paulus.

Howard L. Reed; Marion Mansfield Roland; Lloyd M Sackett; Fenton Mercer Sanger; Herbert V. L. Sapper; Frank Bruner Sorgatz; Marvin Elroy Stout; Simon E. Strader; Elijah Stover Sullivan; Duke William Vincent; Roy Abner Webb; Curt Otto von Wedel; Willis Kelly West; Lee Roy Wilhite; Earl Leroy Yeakel; Andrew M. Young; Antonio Debord Young.

Okmulgee County

COALTON—Clarence Lovejoy Wellman. HENRYETTA—Harry A. Briggs; John Lee Riley. MORRIS—James Otto Walls. OKMULGEE—Virgil Berry; Charles Morris Ming; Harvey Ollis Randel; Robert Leland Westover.

Osage County

AVANT—Isaac F. Clark. GRAINOLA—Edward Louis Miller.

Ottawa County

MIAMI—Guy Peery McNaughton. TAR RIVER—Elmer Franklin Garlington.

Pawnee County

CLEVELAND—Harman Brewer McFarland; Elam Theodore Robinson. HALLETT—Robert Ellee Calhoun. RALSTON—Earl Duwain McBride.

Payne County

STILLWATER—James Henry Mallory; Harry McQuown.

Pittsburg County

[illegible] Hope Foster. [illegible] Gardner. [illegible] Sales Riley. [illegible] Baker. [illegible] B. Bellinger; L [illegible], Leonard [illegible] Jefferson Palmer.

Pontotoc County

ADA—George Arthur Akers; Miles Leslie Lewis; Waller Cornelius Threlkeld. FREDERICK—Charles Hicks Howell.

Pottawatomie County

MAUD—Roland Reed Culbertson. SHAWNEE—Gardner Henry Applewhite; Clyde Ferdinand Loy; Edgar E. Rice; Tazwell David Rowland; Cecil Ben Shrout; Howard Alonzo Wagner; John Asa Walker.

Rogers County

CLAREMORE—James Foster Means. COLLINSVILLE—Hubert William Callahan; Loren Cecil Presson.

Seminole County

WEWOKA—Guy Barton Van Sandt.

Sequoyah County

SALLISAW—James A. Cheek; James Bee Ferguson. VIAN—Cecil Bryan.

Stephens County

DUNCAN—Julius William Niewig.

Texas County

GUYMON—Daniel Schenk Lee. TYRONE—William Walter Dolan Akers; Joseph Henry Jansing.

Tillman County

FREDERICK—Charles C. Conley; Burton Fain. GRANDFIELD—William C. Foshee.

Tulsa County

BROKEN ARROW—Francis Charles Myers. OWASSO—Daniel Wilson Humphreys. TULSA—William Washington Brodie; Paul Richard Brown Jr.; Henry Silas Browne; John F. Capps; Lawrence Heard Carleton; William Richard Clement; George Henry Clulow; J. Donald Enfield; Joel Samuels Hooper; Hector G. Lareau; Ralph Vernon Smith; Jackson Smitherman; Alba Jesse Whitley; William Albert Cook.

Wagoner County

WAGONER—Grover Cleveland Moore.

Washington County

BARTLESVILLE—John Vanmore Athey; Samuel J. Bradfield; Walter Edwin Koppenbrink; Frederick Roscoe Sutton; Herman Eugene Yazel. *OCHELATA—Joseph Thomas Gunter; Raymond* Gessell Sherwood. RAMONA—Walter Morris Sykes.

Washita County

DILL—Edward Sherman Weaver.

Woods County

ALVA—William Ebert Simon; *Oscar Ellsworth* Templin.

Woodward County

MOORELAND—Thomas Burke Triplett. SUPPLY—Roy Keene Goddard; Herman E. *Stecher*. *WOODWARD—James Lindley Patterson*; Floyd Horace Racer; Charles Worman Tedrowe.

OREGON STATE MEDICAL ASSOCIATION

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Aaron Tilzer, Second Vice President	Portland
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K. C. Manion, Treasurer	*Portland*

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OREGON

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Baker	3,060	109.2	19.886	710	28	4	15	21	12	4
Benton	688	62.5	13,551	1,231	11	1	7	7	6	2
Clackamas	1,864	71.6	37,429	1,439	26	..	14	19	9	6
Clatsop	821	35.6	18,543	806	23	2	13	17	17	5
Columbia	662	60.1	13,751	124	11	1	7	9	..	1
Coos	1,628	67.8	23,532	980	24	1	13	21	11	7
Crook	7,778	1,296.3	4,108	684	6	..	2	2	4	1
Curry	1,498	499.3	2,174	724	3	..	2	2	1	1
[1]Deschutes	.....	.....	3,536	442	8	1	6	8	4	..
Douglas	4,922	158.7	23,402	754	31	3	19	28	6	5
Gilliam	1,201	300.2	4,066	1,016	4	..	2	2	1	..
Grant	4,520	753.3	5,607	934	6	..	5	6	3	2
Harney	9,933	1,241.6	5,127	640	8	2	3	7	2	..
Hood River	543	36.2	11,323	754	15	..	4	9	4	3
Jackson	2,836	69.1	34,558	842	41	2	16	32	17	6
Jefferson	2,150	537.5	5,578	1,394	4	..	1	4	1	..
Josephine	1,751	154.5	11,063	851	13	1	4	11	7	3
Klamath	5,999	428.5	11,900	850	14	1	12	12	10	1
Lake	7,920	880.0	5,979	664	9	..	6	8	1	3
Lane	4,612	90.3	44,133	760	58	2	28	42	28	10
Lincoln	1,008	252.0	7,056	1,764	4	..	..	2	..	1
Linn	2,243	72.4	25.626	854	30	..	14	20	14	2
Malheur	9,883	823.5	11,810	984	12	1	10	11	3	3
Marion	1,194	183.6	48,590	747	65	6	38	55	35	13
Morrow	2,025	405.0	4,508	901	5	..	4	5	4	2
[2]Multnomah	451	0.8	316,114	625	505	44	250	394	286	97
Polk	709	50.6	16,058	1,147	14	2	7	10	8	3
Sherman	836	167.2	4,800	960	5	..	2	5	3	..
Tillamook	1,125	125.0	7,577	841	9	2	5	8	5	..
Umatilla	3,173	36.1	21.959	665	33	..	21	25	16	7
Union	2,037	74.5	16,279	581	28	2	17	25	7	7
Wallowa	3,145	285.9	10,427	947	11	..	7	26	6	..
Wasco	2,343	234.3	21,169	2,116	10	..	7	8	8	2
Washington	731	24.3	26,672	889	30	1	17	21	13	2
Wheeler	1,704	568.0	2,513	837	3	..	2	2	..	1
Yamhill	714	34.0	21,835	1,039	21	1	11	17	10	7
Totals	97,757	86.8	862,239	764	1,128	80	591	901	562	203

1. County recently organized; area included with that of other counties.
2. Includes Portland, population 308,399; physicians 500 [M.R.C. 90].

HONOR ROLL

Baker County

BAKER—Clifton Leonard Blakely; *Thomas Joseph Higgins*; Albert William Tiedemann. HAINES—Roger Biswell.

Benton County

CORVALLIS—Harry J. Anderson; Emile Casper Joseph.

Clackamas County

[illegible] Ray Taylor. OREGON CITY—Walter East Mount; Orel Alvin Welsh. OSWEGO—Eugene [illegible] NVILLE—Willis Dole Butler.

Clatsop County

ASTORIA—Arthur Alexander Finch; Alfred E. Kinney; Eldred B. Waffle. SEASIDE—Lance E. Briscoe; Frank Van Doren.

Columbia County

CLATSKANIE—James Leonidas Wooden.

Coos County

BANDON—Smith J. Mann. COQUILLE—George Earl Low. MARSHFIELD—Everett Mingus; Howard Messenger Shaw; Edwin Ephraim

Crook County

PRINEVILLE—John Henry Rosenberg.

Curry County

GOLD BEACH—Carl William Robbins.

Douglas County

RIDDLE—*Arthur* Jesse *Fawcett*. ROSEBURG—*George E.* Houck; *Frank H. S. Vincil*; Charles B. Wade. SUTHERLIN—Orra Edgar Patterson.

Grant County

CANYON CITY—Leo W. Chilton. LONG CREEK—*Philip L.* Newmyer.

Hood River County

HOOD RIVER—Vestal Raul Abraham; John Wesley Sifton; Justin Miner Waugh.

Jackson County

ASHLAND—Arthur William Boslough; S. Gordon MacCracken. GOLD HILL—*William Parmer Chisholm*. MEDFORD—Robert Wellington Clancy; Clark Edw. Saunders; Eberle Randolph Seely.

Jefferson County

WARMSPRING—Clarence Dale Fulkerson.

Josephine County

GRANTS PASS—Julian Philip Johnson; Frederick David Stricker; Jesse P. Truax.

Klamath County

KLAMATH FALLS—Riden Roy Hamilton.

Lake County

LAKEVIEW—Ernest Day Everett; Mearle C. Fox. *NEW PINE CREEK*—John Lucius *Garner*.

Lane County

COTTAGE GROVE—Charles E. Frost. EUGENE—George Ernest Darrow; Reuben Harrison Fields; Wilbur Thomas Gullon; John Eberle Kuykendall; *Thomas Horace* Miller; Sam Clarence Standard Amos O. Waller; Edw. L. Zimmerman. JUNCTION CITY—Merle George Howard; *Daniel Patterson Love. MABEL*—C. Harold Palmer . SPRINGFIELD—Joseph Randolph Barr; *Eugene Kester*; William Howard Pollard.

EUGENE—Benjamin Franklin Scaicfe.

Lincoln County

NEWPORT—Walter Cayley Belt.

Linn County

LEBANON—Joll C. Booth. SCIO—Will Hale Potter.

Malheur County

VALE—Carl Jackson Bartlett. *JUNTURA*—William Elias Hedges.

ONTARIO—Jacob Prinzing.

Marion County

JEFFERSON—Joseph Olin Van Winkle. MOUNT ANGEL—James Ellsworth Webb. *SALEM—Charles Elmer Bates*; Roy Dean Byrd; Harry Elwin Clay; Julius Herman Garnjobst; Lloyd H. Mott; Dick Raymond Ross; *William Carlton Smith. SILVERTON—Floyd D. Lewis; Henry* William Steelhammer. WOODBURN—William W. Kettle; Victor L. Rocho.

Morrow County

HARDMAN—George Garber Gaunt. HEPPNER—Harold T. Allison.

Multnomah County

BRIDAL VEIL—*Sam Frank Le Fevre. PORTLAND*—John George Abele; *Elmer Everett Anderson*; Robert Louis Benson; Nathan *Morris Benyas; Linford Shepheard Besson; Charles Billington; Varillas C.* Birney; Arther Trew Blachly; Charles Delos Bodine; *Amos* Watt Botkin; Isadore C. Brill; *Lloyd Wesley Brooke*.

Roscoe William Cahill; William Maxwell Campbell; T. Homer Coffen; Isadore Henry Cramer; *Ernest* Charles Dalton; Ferdinand H. Dammasch; *Richard Benjamin Dillehunt; Chester Arthur Downs*.

Ralph Albert Fenton; Eric Julian Gambee; Robert St. Clair Graffis; Daniel Grant; Herbert Merton Greene; Albert Allen Grossman; Fred Gullette; Frank Cleveland Hart; Ernest D. Hitchcock; John Adam Hughes; Garrett Lee Hynson.

Richard F. James; Marion Jacobs Jones; Thomas Martin Joyce; Joseph Edward Kane; William Sidney Knox.

Fred Adcok Lieuallen; *Kenneth Alexander J.* MacKenzie; James Lorne Manion; William Orville Manion; Marius B. Marcellus; Charles Rafferty McColl; Clarence Joseph McCusker; *Frank Raymond* Menne; *Percy F.* McMurdo; Dwight F. Miller; Harry B. Moore; Karl Peterson Moran; Earl Vincent Morrow; Edwin Woodbridge Morse.

Benjamin L. Norden; Charles Cowan Osborn; Dorwin L. Palmer; Joseph August Pargon; Ray Emmett Pomeroy.

David Nathaniel Roberg; Alpha E. Rockey; *Paul Rockey*; *Horace* Louis Rosenberg; Arthur Samuel Rosenfeld.

Spiro Sargenitch; Eweldas Kallistas Scott; William George Scott; Charles Edwin Sears; Lawrence Selling; John James Sellwood; William Albert Shea; Robert Archie Sherwood; Harry Everett Shoot; William Henry Skene; Clarence U. Snider; Ernst August Sommer; John Archibald Stewart; William Edgar Stewart; George Burnside Story; Ernest Hamilton Streit; John Guy Strohm; Karl Joaum Swenson.

Archie Clifford Van Cleve; William Henry Vose; Benjamin Newton Wade; Joseph Robbins Wetherbee; Calvin Stuart White; George Shattuck Whiteside; Otis Buckminster Wight; George Flanders Wilson; Louis Jacob *Wolf*; Joseph Frederick Wood; Robert Clark Yenney; Edward Frank Ziegelman.

PORTLAND—Ernest Nathaniel Crockett; William Boyd Hamilton; William Charles Munly; Leon E. Story; Richard Howells Wellington.

Polk County

DALLAS—Lenthal A. Bollman. FALLS CITY—Glenn Edw. Prime. INDEPENDENCE—*Chas.* Francis *Cropp*.

Umatilla County

HERMISTON—Clyde Otis Wainscott. PENDLETON—James Archibald Best; Hillis Hall Hattery; James D. Plamondon. PILOT ROCK—Lansford Monroe Spalding. WESTON—Charles Henry Smith; *Henry Zophar* Tharp.

Union County

COVE—Arthur Clifford McCown. HOT LAKE—Frank Earnest Butler. IMBLER—Carl Sinclair *Moore*. LA GRANDE—Harry Matthew Boury; Frank Leslie Ralston; Herbert Lyman Underwood; George Rudolph Vehrs

Wasco County

MAUPIN—John Lewis Elwood. THE DALLES—Thompson Coberth.

Washington County

BUXTON—Prince C. Page. FOREST GROVE—Charles Edwin Hawke. ORENCO—John Bell Dinsmore.

Wheeler County

FOSSIL—Hugh Samuel McKenzie.

Yamhill County

McMINNVILLE—Edgar Hayes Brown; Charles L. Williams. NEWBERG—Harris Augustus Littlefield; John Silas Rankin. YAMHILL—Howard Ernest Carruth; Roy Bennett Craver.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

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David N. Dennis, 3d Vice President.................................Erie
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Cyrus Lee Stevens, Secretary......................................Athens
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Geo. W. Wagoner, *Treasurer*.....................................Johnstown

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First District.—1st and 3d Censorial Districts.—Berks, Chester, Delaware, Montgomery, Philadelphia and Schuylkill counties. Ira G. Shoemaker, Councilor, Reading.

Second District.—4th and 5th Censorial Districts.—Adams, Cumberland, Dauphin, Franklin, Fulton, Lancaster, Lebanon and York counties. Frank G. Hartman, Councilor, Lancaster.

Third District.—2d and 18th Censorial Districts.—Bucks, Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike and Wayne counties. Harry W. Albertson, Councilor, Scranton.

Fourth District.—6th and 7th Censorial Districts.—Columbia, Huntington, Juniata, Mifflin, Montour, Northumberland, Perry and Snyder counties. Horatio W. Gass, Councilor, Sunbury.

Fifth District.—7th and 15th Censorial Districts.—Bedford, Blair, Cambria, Center, Clearfield, Fayette, Somerset and Westmoreland counties. Spencer M. Free, Councilor, DuBois.

Sixth District.—14th and 16th Censorial Districts.—Bradford, Clinton, Lycoming, Sullivan, Susquehanna, Tioga, Union and Wyoming counties. Donald Guthrie, Councilor, Sayre.

Seventh District.—8th and 9th Censorial Districts.—Allegheny, Beaver, Greene, Lawrence, Mercer and Washington counties. Irwin J. Moyer, Councilor, Pittsburgh.

Eighth District.—10th and 11th Censorial Districts.—*Cameron*, Crawford, Elk, Erie, McKean, Potter and Warren counties. *James Johnston, Councilor, Bradford.*

Ninth District.—12th and 13th Censorial Districts.—Armstrong, Butler, *Clarion, Forest*, Indiana, Jefferson and Venango counties. J. B. F. Wyant, *Councilor*, Kittanning.

PENNSYLVANIA

Adams County

EAST BERLIN—Edgar Allen Miller. GETTYSBURG—John McCrea Dickson. HAMPTON—Robert Dubs Swab.

Allegheny County

AVALON—John. Walter Frey. BELLEVUE—John Paul McComb. [illegible] lvin [illegible] er Gard- arold [illegible] ry Snow- G. [illegible] O'Neill Edv [illegible] Thomas Irving Cotton; John Edward Moore. CASTLE SHANNON—Howard Henry Permar. [illegible]; Sloan A. Brown; Edward M. Hand; [illegible] Dean Brant; John Nagle Hayes. CUR- [illegible] Golden. [illegible]; Dennis Eugene Szabo. EAST McKEESP[illegible] ELIZABETH—Ivo Ernest Rowland. EM[illegible] Barrett; John Shaffer Plumer. GREENOC[illegible] HOMESTEAD—Sidney Kallaway; Scott [illegible] Treshler. HOMEWOOD—Thomas L. McCullough. IMPERIAL—Fred Lyle Patterson. McKEESPORT—Milton H. Bachman; *Edward Ellis Evans; Samuel* [illegible] ldberg; Louis Jay Goldblatt; William Christian [illegible] David Pollock *McCune Jr.; Edward Y. Ord*; [illegible] rank George Ungerman; *Joseph Coulter* Wiley. [illegible] William Cotton; Charles G.. Eicher; Hubert J. Goddrich; James Clinton Hawkins; John Huey Humes; *Charles Leslie* Piper; Chester S. [illegible] MT OLIVER—Carl William Truter; Charles W. Yates. OAKMONT [illegible] vin Edgar. PITTSBURGH—Samuel Herbert Ac[illegible] Alexander; Charles William Allen; Charles Cla[illegible] *Shaw* Arbuthnot; Russell Bigler Armour; Nathan Ashinsky; Ralph John Askin; Paul Gregory Atkinson; Charles Howard Aufhammer.

Frank Raymond Bailey; Joseph Shannon Baird; Moses Haven Baker; Kirk Bentley Barb; William Piper Barndollar; Harry Floyd *Baumann*; Andrew Ludwig [illegible] dilin Benz; Carl Franklin Bigoney; Owen He[illegible] el Blevins; Max A. *Blumer*; David Alexander B[illegible] David Hartin Boyd; Claude Lee Bradford; M[illegible] Charles Raymond Brenner; Robert Bahner Br[illegible]; Paul Cooper Bruce; Albert Joseph Broecken; [illegible] Clarence John Buck; Alfred Joseph Buka; W[illegible] Thomas Burleigh; Charles Francis Butler.

Bert W. Caldwell; John Charles Calhoun; Verner Bickart *Callomon*; Donald W. Cameron; Robert John Campbell; Wald Edwin Carson; Bender Zelotes Cashman; Burns Stoddard Chaffee; Edgar Thomas [illegible] Clark; Nelson *H. Clark*; Roy Sidney Clark; [illegible] bert Miller Cochrane; Morris Aaron Cohen; [illegible] xander Hunter Colwell; William Judd Crook[illegible] ingham; William Louis *Cunningham*; Clyde [illegible]; Ewing Wilbur Day; Walter *Alfred* Dearth; [illegible] regg Arthur Dillinger; William Paul Dodds; [illegible], *Alfred* William Duff; John Park Duggan; Andrew Peter D'Zmura.

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Norman Charles Ochsenhirt.

William Theodore Palchanis; Samuel Bemis Pearce; Reuben Harry Pearlman; James Kingsland Morange Perrine; Ward Irving Pierce; *Henry Thompson* Price.

Donald George Rafferty; David Louis Rapport; Wm. Burton Getty Ray; Wm. Edward Reetenwald; Maurice Snowden Redmond; Fred Dawson Reynolds; Dewayne Greenwood Richey; Stanley Marshall Rinehart; James William Robinson; Ralph Vincent Robinson; Wilton H. Robinson; Frank Conrad Rote; James Andrew Merle Russell.

Daniel E. Sable; Frederick Scott Sallsbury; Hugo *Nicholas Sarchet*; Arthur Phillip Schaefer; Howard Gustav Schleiter; Walter William Schmid; Thomas Schubb; Karl McCormick Scott; Carroll Jenkins *Scurry*; Simon Seegman; John Howard Seipel; Alfred *Roman Seraphin; Byron* Earl Shaw; Nicolas G. L. Shillito; George H. Shuman; Paul Rothrock Sieber; Charles Norman Silman; David Silver; Frank Farrow Simpson; John Reid Simpson; Karl Stanley Simpson; Sumner *Clelland* Simpson; Roy Ezra Sleppy; Morris Abel Slocum; Henry MacVicker Smith; Stanley Sinclair Smith; Roy Ross Snowden; John Joseph Sosnowski Jr.; Marcus S. Spiro; Thomas Mervin Stahlman; Paul Beadle Steell; John Logan Steffy; Lawrence Lorraine Stepp; William John Stewart; Richard Ernest Stifel; Salvador Peter Sunseri.

Eugene John Truschel; George Wilson Van Gorder; Vite Edgar VanKirk; Carey Judson Vaux; James Kerchner Wagenseller; *Albert Adolph* Wagner; Clark Woodworth Wakefield.

George S. Wallace; Paul Hardtmayer Walter; William Summers Watson; Maximilian Hugo Weinberg; Benjamin Weiner; *George Allan* Wesley; Harry Clarkson Westervelt; Earl Phillips [illegible] Wildhaber; Nathaniel William [illegible] Charles Hormel Wolfe; Edward [illegible] Lynn McCready; DeWitt Bald[illegible] Robert Graham; [illegible] Thomas Pyle; Carl K[illegible] ietze; Paul G. L. H[illegible] Edward Jewett Meley. WILKINSBURG—Carl [illegible] liam Earl Ellenberger; George H. Kirkpatrick; William Ody Markell; William Joline Martin; William John McGregor.

James Morgan McNall; Benjamin Howard *Patterson*; Edward Alexander Pitcairn; Clyde Wilfred Sample; Wilder Judd Walker; James Harvey Whitcraft; James Edward Wyant. WILMERDING—Harry Oliver Pollock; Randall Zimmerman. WILSON—Austin Lynch Cort. WOOD-[illegible] *lmer Magee.* [illegible] *w Hunter.* [illegible] *Armstrong Baird; Guy Sedgwick Vogan.*

Armstrong County

ADRIAN—James Earle Quigley. APOLLO—Ray Nelson Lewis. FORD CITY—Carl Howard Robinsteen; Ellis Calvin Winters. KITTANING—Charles H. Furnee; Andrew James Sedwick; Thomas Newton McKee; Edward Heilman McClister. SEMINOLE—Benjamin Joseph Longwell. WIDNOON—Thomas R. Hillard.

Beaver County

BEAVER—*Fred Blanchard* Harrington; Fred Bailey Wilson. BEAVER FALLS—John Muntz Jackson; William J. *Sterrett*; *Jesse Howard* Swick; Leroy Stewart Townsend. FREEDOM—George *Fay Boal*; *Francis* Howard McCaskey. MONACO—John Huber Wagner. NEW BRIGHTON—William Frederick Beitsch; Ralph H. Boots; Samuel Henry Pettler. WOODLAWN—George Walworth *Mellon.*

Bedford County

[illegible] Brant.

Berks County

[illegible] Pierce Lytle. BOYERTOWN—Charles Brewer [illegible] Keely. [illegible] DOUG-[illegible] dan Se[illegible] Ballou Jr. [illegible] er Rob[illegible] MORGANTOWN [illegible] Melvin [illegible] Bertolet; Charles Solomon Cantough; Roy Douglas Champlin; Leon Galvin Darrah; Agnew [illegible] Paul Henry Gerhardt; Simon Benjamin Glick; [illegible], David Solomon *Grim*; *Clifford* Leslie Kaucher; [illegible]; George William Krick Jr.

Wellington Alfred Lebkicher; William Leiser; William Samuel Long; David William Morgan; Henry Isaac *Newcomet*; *Addison May* Rothrock; Henry Franklin Schantz; Ira Goff Shoemaker; Thomas Millette Snyder;

Robert Eugene Strasser; Charles Alvin Yocum. SINKING SPRING—James Gicker Matternes. TEMPLE—Abner Henry Bauscher. WOMELSDORF—John Elias Livingood.

Blair County

ALTOONA—George Ellsworth Alleman; Fred Herman Bloomhardt; Samuel Isett Bloomhardt; Daniel Bohn; Arthur St. Clair Brumbaugh; John Hughes Galbraith; Andrew Jackson Williams Handwork; John Dan Hogue; Ernest Justin Hoover; Logan E. Hull.

David Kaufman; Don Cameron Kyper; Charles Henry Manlove Jr.; Claude Edwin Snyder; John Robert Thompson Snyder; James Swan Taylor. BELLWOOD—Brooklyn Boyer Lavengood. HOLLIDAYSBERG—Webster H. Calvin; Roy Deck; Arthur King Lotz; Samuel Calvin Smith. ROARING SPRINGS—Wilfred Lorenz Hair. TYRONE—Carey Clarence Bradin; John Blaisdell Nason.

PENNSYLVANIA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 46	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Adams	528	13.9	34,319	903	38	..	14	25	26	3
[1]Allegheny	725	0.4	1,196,128	699	1,710	50	1,031	1,226	1,099	345
Armstrong	653	9.1	79,068	1,098	72	1	42	48	57	10
Beaver	429	3.7	94,355	799	118	3	62	83	66	13
Bedford	1,026	23.9	38,879	904	43	..	21	33	22	7
[2]Berks	865	3.4	200,454	779	257	8	128	180	109	35
[3]Blair	534	3.8	126,202	888	142	5	75	95	87	24
Bradford	1,145	15.9	54,526	757	72	1	31	44	53	11
Bucks	608	5.3	80,428	793	114	6	.45	74	69	10
Butler	790	8.7	84,169	924	91	1	52	69	59	7
[4]Cambria	717	4.2	210,874	1,240	170	5	118	140	106	27
Cameron	392	65.3	8,079	1,346	6	..	3	5	4	..
Carbon	406	9.0	58,931	1,309	45	..	24	33	29	7
Center	1,146	20.8	43,810	796	55	3	16	32	36	10
Chester	777	5.1	119,082	788	151	7	70	97	91	25
Clarion	601	13.1	38,356	833	46	1	23	36	31	8
Clearfield	1,142	12.4	103,371	1,123	92	..	52	64	67	13
Clinton	878	27.4	33,259	1,039	32	..	15	22	25	5
Columbia	478	8.4	54,725	960	57	..	26	34	50	10
Crawford	1,038	13.5	61,565	799	77	3	36	50	45	13
Cumberland	528	6.5	57,499	737	78	4	26	52	49	15
[5]Dauphin	421	2.4	151,998	710	214	9	122	156	154	22
[6]Delaware	185	0.9	134,800	687	196	18	92	137	106	36
Elk	806	29.7	38,038	1,408	27	2	14	17	22	1
[7]Erie	781	4.1	127,960	680	188	8	104	135	127	39
Fayette	795	5.0	209,083	1,319	158	6	102	131	116	38
Forest	423	60.4	9,435	1,347	7	..	4	6	3	..
Franklin	751	9.7	63,331	810	78	4	39	57	51	14
Fulton	402	57.4	9,703	1,386	7	..	4	7	6	1
Greene	574	13.3	29,320	681	43	1	17	29	19	2
Huntington	918	19.5	40,971	871	47	1	19	34	33	7
Indiana	829	10.6	83,474	1,070	78	1	43	57	52	13
Jefferson	661	13.2	65,992	1,739	50	..	37	48	40	10
Juniata	392	26.1	15,013	1,000	15	..	4	8	13	2
[8]Lackawanna	451	1.5	307,556	1,049	293	8	176	217	174	59
[9]Lancaster	941	4.2	172,712	771	224	15	100	143	132	22
[10]Lawrence	360	3.6	79,512	819	97	5	49	78	60	14
Lebanon	360	4.5	63,753	807	79	1	27	46	36	6
[11]Lehigh	344	2.2	137,035	867	158	2	78	112	92	14
[12]Luzerne	892	24.5	406,009	1,134	358	7	203	280	207	79
[13]Lycoming	1,220	10.4	84,571	722	117	3	45	78	82	11
McKean	987	15.7	47,868	759	63	1	28	43	49	8
Mercer	700	6.9	92,526	907	102	3	52	57	64	16
Mifflin	398	10.2	31,160	798	39	2	7	32	26	3
Monroe	623	18.3	24,239	712	34	4	12	21	23	7
[14]Montgomery	484	1.2	191,921	489	392	19	128	190	155	50
Montour	130	7.2	14,868	782	19	1	11	15	16	3
[15]Northampton	372	2.1	148,089	831	178	3	88	131	130	60
Northumberland	454	8.3	126,390	1,469	86	4	48	74	73	12
Perry	564	25.6	24,136	1,097	22	1	10	13	17	3
[16]Philadelphia	133	0.4	1,735,517	502	3,453	262	2,025	2,629	1,779	767
Pike	544	90.7	8,033	1,338	6	..	2	3	4	..
Potter	1,071	-42.8	29,729	1,118	25	2	9	18	16	4
Schuylkill	777	4.2	233,419	1,261	185	4	114	154	105	44
Snyder	311	14.8	16,800	800	21	1	9	14	15	4
Somerset	1,034	14.2	81,042	1,111	73	..	37	54	50	8
Sullivan	458	38.2	11,293	941	12	1	4	10	9	2
Susquehanna	824	20.1	37,746	920	41	..	13	29	20	5
Tioga	1,142	20.0	42,829	751	57	2	20	37	36	7
Union	305	14.5	16,249	773	21	1	6	15	16	1
Venango	661	8.9	61,257	827	74	2	36	57	50	7
Warren	902	16.7	40,029	740	54	3	23	42	37	9
Washington	862	4.8	181,271	879	206	..	96	148	122	25
Wayne	739	23.8	29,236	943	31	1	13	26	26	3
Westmoreland	1,039	4.0	283,225	1,106	256	10	122	182	166	60
Wyoming	397	17.3	15,509	674	23	..	9	16	19	2
[17]York	903	5.5	150,097	909	166	2	79	114	122	23
Totals	44,831	3.01	8,783,728	761	11,539	518	6,190	8,342	6,750	2,022

Bradford County

ATHENS—Carlos Pennington Holcomb; Reuben Louis Leverton. OVERTON—Arthur Judson Bird. SAYRE—Donald Guthrie; Carlyle Newton Haines; John Mark Higgins; Walter [illegible] SYLVANIA—Grant Harden Gustin. TOWANDA—G[illegible] WYALUSING—George Hiram Blakeslee Terry. [illegible] Cornelius Down.

Bucks County

BRISTOL—Charles Shewell Abbott; William Cooper Le Compte; James Frederick Wagner. DOYLESTOWN—Percy Musgrave. EDDINGTON—John Morris Carter. LANGHORNE—Samuel LeRoy Ridge. MORRISVILLE—Stephen Smith Percy Wetmore. NEWTOWN—George Albert Barker Jr. SPINNERSTOWN—Victor K. Marsteller. TULLYTOWN—James Monroe Klenk.

Butler County

BUTLER—[illegible] E. Campbell; Clarence Henry Ketterer; Claude [illegible] Logan Stackpole. MARS—Alois Frank Seifries. [illegible] Thompson Lowry. SLIPPERY ROCK—Frank Dick-[illegible]

Cambria County

BARNESBORO—Albert Frank Dunsmore; [illegible] Garman. CONEMAUGH—Albon Ellsworth Fl[illegible] Albert Lynch; Neill Duncan MacArtan. [illegible] King. JOHNSTOWN—John Walter Bancrof[illegible] Edwin Charles Boyer; Bennett Arthur Braude; Moses Clayborne; Charles Glassmire; William Edward Grove; Charles Elliott Hays; Homer LeRoy Hill.

John Bodine Lowman; Louis Henry Mayer Jr.; Joseph John Meyer; Arthur [illegible] Harry Hartzell Penrod; Daniel Patteo Ray; Frank [illegible] I. B. Schramm; Bernard Pierre Widmann. NANTY [illegible] Wilkinson. SOUTH FORK—Edward Pardoe. ST. [illegible] Dickinson.

Carbon County

BEAVER MEADOWS—Paul M. Hunsicker. LANSFORD—Joseph John Bellas; Russell R. Jones; Robert Harrison Kistler; Maurice Henry Neumuller. PALMERTON—Roger Putnam Batchelor; Harold Edwards Hersh.

Centr County

BELLEFONTE—David Dale; Scott M. Huff; Thomas Rogers Morgan. MILLHEIM—John Andrew [illegible]URG—Andrew Jackson Griest; Samuel Marks; [illegible] PT. MATILDA—Joseph Walter Harshberge[illegible] Peter Hoffer Dale. WOODWARD—George Potter Ard.

Chester County

ATGLEN—Frederick Lewis Baker. BERWYN—Frank L. Richards. CHATHAM—Lawrence Clayton Moore. CHESTER SPRINGS—Frank Happersett Wells. COATESVILLE—William Gifford Francis; De Haven Hinkson; Oscar J. Kingsbury; Charles Ira Pratt. KENNETH SQUARE—John Whitfield Merryman; Jacob Julius Schwegler. MALVERN—Clarence S. Kurtz. OXFORD—Chester Barry.

PAOLIE—Robert Coffman Hughes. PARKER FORD—Charles Dimm Dietterich. PHOENIXVILLE—Mark Calvin Rabert. STRICKERSVILLE—James A. Buchanan. WEST CHESTER—John Aloysius Farrell; Vincent J. Grauten; Israel Pemberton P. Hollingsworth; Charles Rees Palmer; Henry Pleasants, Jr.; Henry Abraham Rothrock; George King Strode; William Wellington Woodward; Walter Webb.

Clarion County

CLARION—Char[illegible] William Barr Hetzel; Franklin Pearce Phillips. [illegible] Arthur Mooney. FOXBURG—John Notley Car[illegible] Texter. NEW BETHLEHEM—William Otta Dougherty; William Charles Keller.

Clearfield County

BECCRIA—Frank Klare Miller. BOARDMAN—James Hudson Fiscus. BURNSIDE—William C. Browne. CLEARFIELD—Arthur Donald Cowdrick; William Scott Piper; Lever Flegal Stewart. COALPORT—Bradley Hartman Hoke. FALLS CREEK—Archie Bernice McConnell; Arthur Foster McCormick. HOUTZDALE—William Raymond McKenzie. KYLERTOWN—George Breen Kirk. OSCEOLA MILLS—Austin Chalmer Lynn. TYLER—Harry Arthur Vosburg Jr.

Clinton County

BEACH CREEK—Perry McDowell Tibbins. CHATHAM RUN—Joseph Mackay Corson. LOCK HAVEN—John Burnworth Critchfield; George Dorsey Green; James Louis Lubrecht.

Columbia County

BERWICK—Edward Lowndes Davis; William C. Hensyl. BLOOMBURG—Henry Bierman; Jacob Ralph Brobst; John Tremper Macdonald; Donald Barton McHenry; James Robert Montgomery Jr.; Charles Benjamin Yost. MILLVILLE—James Robert Gemmill. NUMIDIA—Allen Vincent Carl.

Crawford County

CAMBRIDGE SPRINGS—Charles E. Mullin. CONNEAUT LAKE—Harry Lee Brush. CONNEAUTVILLE—Samuel James Dickey. GENEVA—Arne Wilbur Clouse. MEADVILLE—Edwin Ellsworth Brophy; Frank Allison Clawson; William Emory Hyskell; Joseph Charles McFate; George Adrien Poux; Andrew Ignatius Rosenberger; William Barton Skelton. TITUSVILLE—Valentine Burton Eiler; Albert Claudius Shannon.

Cumberland County

CARLISLE—Elmer A. Hudson; William Tell Phillipy; Edward Robert Plank; William Starick Ruch; Harry Allen Spangler; Walter Scott Taylor; Parker U. Wagoner. HUNTSDALE—Selden Sylvester Cowell [illegible] Albert LEMOYNE—Edgar Shuman Everhart. [illegible] B. Smith; Richard Rockafellow Spahr. M[illegible] Harry Fralic. NEW CUMBERLAND—John [illegible] William McLaughlin. SHIPPENSBURG—John Bruce McCreary.

Dauphin County

ELIZABETHVILLE—Robert Edwin Barto; Floyd Troutman Romberger. HALIFAX—Frederick C. Smith. HARRISBURG—William James Basler; Carson Coover; William Tyler Douglass.

Jesse Luther Lenker; George Reily Moffitt; Roscoe Livingston Perkins; [illegible] Frank Fredk. Dunott Reckford; James Me[illegible] George Abraham Treiman; Richard Yof[illegible] LINGLESTOWN—Frank Landis Shenk. [illegible] Evans. OBERLIN—Frederick Webster B[illegible] wood Peters; Robert McGuigan Hursh.

HARRISBURG—Gilbert Lagoria Dailey; John William MacMullen.

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1. Includes McKeesport, population 48,299; physicians 61 [M.R.C. 13], and Pittsburgh, population 586,196; physicians 1,170 [M.R.C. 258].
2. Includes Reading, population 111,607; physicians 162 [M.R.C. 24].
3. Includes Altoona, population 59,712; physicians 89 [M.R.C. 16].
4. Includes Johnstown, population 70,473; physicians 98 [M.R.C. 18].
5. Includes Harrisburg, population 73,276; physicians 146 [M.R.C. 14].
6. Includes Chester, population 41,857; physicans 68 [M.R.C. 14].
7. Includes Erie, population 76,592; physicians 129 [M.R.C. 29].
8. Includes Scranton, population 149,541; physicians 212 [M.R.C. 41].
9. Includes Lancaster, population 51,437; physicians 87 [M.R.C. 16].
10. Includes New Castle, population 41,915; physicians 66 [M.R.C. 9].
11. Includes Allentown, population 65,109; physicians 102 [M.R.C. 12].
12. Includes Wilkes-Barre, population 78,334; physicians 147 [M.R.C. 32].
13. Includes Williamsport, population 34,123; physicians 71 [M.R.C. 6].
14. Includes Norristown, population 31,969; physicians 52 [M.R.C. 8].
15. Includes Easton, population 30,854; physicians 74 [M.R.C. 6].
16. Includes Philadelphia, population 1,683,664; physicians 3,450 [M.R.C. 764].
17. Includes York, population 52,770; physicians 53 [M.R.C. 15].

Delaware County

CHESTER—Ethan Allen Campbell; John O. Crist; William Benedict Evans; William Knowles Evans; John Schofield Eynon; Robert Anthony Kilduffe Jr.; Frank Richard Nothnagle; Adrian Van Bracklin Orr; James Ray Parker; Ralph Edward Pilgram; Charles Andrew Rowland; George C. Webster. CLIFTON HEIGHTS—Estes Paine. COLWYN—Clark Samuel Long. EDDYSTONE—George L. Armitage; Alexander Donald Ferguson. ELWYN—Percival M. Kerr. GLEN OLDEN—Claude Pasamore Brown; Harry Gallagen. LANDSDOWNE—Eugene A. Case; John Aloysius McKenna. LLANERCH—William F. Moore; Isaac Burton Roberts. MARCUS HOOK—Harry Thomas Stockton; Walter John Whitehouse. MEDIA—Isaac Ivison Parsons; MORTON—Alfred G. Tinney. NORWOOD—Samuel Beveridge Harris. RUTLEDGE—Norman Davis Smith. WALLINGFORD—William Henry Furness; Casper Wistar Miller. WAWA—Peter McCall Keating. WAYNE—Clarence Wyman Lincoln; Cyrus Walter Truxal Jr.

CHESTER—Anthony Maurice Bennardi; Albin Reman Rozplech.

Elk County

JOHNSONBURG—Eugene Bellantyne Sharp.

Erie County

ALBION—LeRoy Umburn. CORRY—Ninde Troy Gillette; Theodore Alvin Little. CRANESVILLE—John Franklin Rutherford. EDINBORO—Harold Alfred Ghering. ERIE—Martin Clement Barrett; Ignatius Aloysius Bednarkiewicz; John Eastman Belding; Guy Cluxton Boughton; James Elmer Croop; Arthur George Davis; Joseph Edward Dudenhoefer; Scott Dillon Gleeten.

Ralph Emerson Henry; Elmer Hess; James DeWitt Jackson; Charles Cochran Kemble; Lemuel Abraham Lasher; Carl Blaine Lininger; John Hepburn Lloyd; Ray Henry Luke.

Frank Peter McCarthy; Whitman Carlisle McConnell; Richard Oliver Miller; John Joseph O'Donnell; George Arthur Reed; William Ridgway Bethe; George William Schlindwein; James Robert Smith; Joseph Armin Stackhouse; Jesse Cunningham Stilley; James T. Strimple; Frank Alfred Trippe; Elmer Grant Weibel. FAIRVIEW—Walter Raymond Krauss; Harry Eugene Lyons. North East—James Louis Heard. NORTH GIRARD—Adelbert Boyd Miller. WESLEYVILLE—Ross W. Thompson.

Fayette County

ALICIA—George Washington Lang. ALLISON—W. Sturgis Frankenburger. BROWNSVILLE—George Fulton MacDonald. CONNELSVILLE—William James Bailey; Don. Dickinson Brooks; Edward W. Douglas; Elliott Bard Edie; James Lester Junk; Alexander Robert Kidd; Robert S. McKee. DUNBAR—James B. Carroll; Samuel Clarke Dowds; Francis Joseph King. FAIRCHANCE—William Proudfit Patterson. GRINDSTONE—Alexander White Spears. HILLCOKE—Walter Teed Messmore. MASONTOWN—Harry Brady; John Lindsey Messmore; Edgar Kenneth Wells. NEW SALEM—Carton Harold Davidson; David Earl Lowe. POINT MARION—Charles James Devlin. REPUBLIC—Charles Calvin Ryan. SMITHFIELD—Horace B. Guiher; Jesse Lazear McCracken. SOUTH BROWNSVILLE—Arthur Keys Oldbert. SOUTH CONNELSVILLE—Paul Goewey Dick. UNIONTOWN—Samuel Austin Baltz; Charles Dana Bierer; Albert Edward Coughanour; Benjamin Perkins Doran; Robert Harrison Jeffrey; Clark McEwen Luman; William Aristead McHugh Jr.; Peter Burrill Mulligan; George H. Robinson Jr.; Charles Hervey Smith. WHITSETT—Don Cameron Fosselman.

Franklin County

CHAMBERSBURG—Charles Core Gans; Lewis Hiram Seaton; Michael Webster Stofer. FORT LOUDON—Richard Penn Smith. MONT ALTO—John Berry; Henry Adam Carskadden; Henry Aloysius Gorman; John Albert Berchard Lowry; Jacob Sam Posner Makler; Augustine Joseph Mulligan; Nathaniel George Shafritz; Maurice Theodore Sloane; William Wilson Woods. WAYNESBORO—David Miller Shoemaker; Samuel Brown Thomas.

Fulton County

BUCK VALLEY—James Malcolm McKibbin

Greene County

JEFFERSON—John Charles Kerr. WAYNESBURG—Hersey Elroy Orndoff.

Huntingdon County

ALEXANDRIA—James Roy St. Clair. DUDLEY—Howard Dovey. HUNTINGTON—Samuel Oscar Brumbaugh. MAPLETON—Frederick Pratt Simpson. ORBISONIA—Raymond Rudolf Decker. PETERSBURG—John Maulfair Keichline Jr. MOUNT UNION—James Robert Morrow.

Indiana County

CLYMER—J. Merle Everwine. BLACK LICK—William Charles Widdowson. HOMER CITY—Charles Henry Kirk; Melville Mack Palmer. INDIANA—Medus Monroe Davis; William Dunn Gates; William Henry Nix. LUCERNE MINES—James Ward. MARION CENTER—John Murdock Stewart. PLUMVILLE—Clark Monroe Smith. ROSSITER—Waldo Emerson Preston. SALTSBURG—Abraham Jerome Kaiser. WATERMAN—Leon Jermain Camche.

Jefferson County

BROOKVILLE—Dav[illegible] Lawson Snyder. DELANCEY—Charles [illegible] lace Black; Jeremiah [illegible] SAYTOWN—Walter I [illegible] TIMBLIN—Harry Wee [illegible] J. han.

Juniata County

RICHFIELD—Percy Edward Deckard. VAN DYKE—Henry Stanley Kerchner.

Lackawana County

ARCHBALD—John Vincent Kearney; Patrick Joseph McDonnell; John Hinton Moss. CLARK'S SUMMIT—Herbert Eugene Simrell. DALTON—Howard Locke Vail. DUNMORE—Eugene Augustine Curtin; Frank Michael Ginley; Almon Cyrus Hazlett. GLENBURN—Elwood Linnell Davis. MAYFIELD—Thomas Patrick Martin. OLD FORGE—John Lawrence Loftus. OLYPHANT—John Joseph Bendick. PECKVILLE—Milton Irving Pentecost; Clarence Leonard Young. SCRANTON—John Vincent Allen Jr.; George Brown Beach; Frank Andrew Carroll; Daniel Edward Berney; John Decker Butzner; Harvey Burton Cornell; John Bliss Corser; Arthur Eggleston Davis; Earle Rice Davis; Fred Whitney Davis; William Joseph Leo Davis; James Nelson Douglas.

Leo Patrick Gibbons; Howard Winslow Gibbs; Harry Goodfriend; Clare Heilner Hanley; Harry Kane Hobbs; Heister Vanderslice Hower; David John Jenkins; William Edwin Keller; Thomas Gore Killeen; Harry Michael Kraemer; James Davis Lewis; Jacob John Lonsdorf Jr.

Connell Edward Murrin; James Edward O'Toole; Lewis Herbert Raymond; Earl Herb Kilhorn; Linford Brooks Roberts; John Isaac Robison; James Peter Haggerty Ruddy; Elmer Bryant Shaul; Matthew J. Shields; Isadore Edward Smigelsky; James Stein; Frank Paul Stromo; Robert E. Thomas

Jonathan M. Wainwright; Frank Robert Wheelock; Robert Vandenberg White; Albert Jefferson Winebrake; John Francis Zychowicz. QUARRYSVILLE—De La Ray Signor. WAVERLY—Robert Bliss Mackey.

PECKVILLE—Ralph Harrison Armstrong.

Lancaster County

CHRISTIANA John Ross Smith Martin. COLUMBIA—Milton Valentine Miller. Charles Joseph Shillott. LANCASTER—Theodore Burton Appel; Charles A. Cohn; Henry Blaine Davis; Harry Culbertson Fulton; Harry Gilmore Hassenplug; Samuel H. Heller.

William Hubley Herr; William Henry Jones Jr.; Harry Pomerantz; Gardner Atlee Sayres. Grover Cleveland Schwartz; William Erdman Seibert; Charles P. Starr; Grant B. Weaver. LITITZ—John Lincoln Hertz. MANHEIM—Pursifor Frazier Gule.

LANCASTER—Percy Clark Joy; John Hazlett Turner, III.
MT. JOY—Wm. McC. Workman.

Lawrence County

ELLWOOD CITY—Colin M. Dumm; Charles McClellan Iseman; Boyd Willamber Schaffner; David Clair Vosler. HARLANSBURG—William David Cleland. NEW CASTLE—James Magee Blackwood; Thaddeus Clair Brown; Jesse Robert Cooper. Louis Ward Grossman; Benjamin Franklin Haines; Howard C. Harper; Don Carlos Lindley; Frank E. Urey. NEW WILMINGTON—Charles James Smyser.

Lebanon County

ANNVILLE John Edward Marshall. LEBANON—Adam George Hellman; Alfred Desch Strickler. NEWMANSTOWN—David M. Voga. PALMYRA—Simeon David Bashore. REXMONT—John Dohner Bogert

Lehigh County

ALLENTOWN—Quintin David Arner; Warren H. Butz; George Solomon Deibert; Ralph Andrew Fisher; William Frederick Herbst; Martin Seler Kleckner. Walter Emery Lang; Harold Frederick Lanshe; Ruben Axel Emanuel Peterson; Charles Benjamin Reitz; Thomas Lawrence Smyth. CATASANSAUQUA—Harry L. Baker. COOPERSBURG—Frank H. Long

ALLENTOWN—Clarence Calvin Rogers.

Luzerne County

ASHLEY—Daniel Francis Frede[illegible] Koons. DORRANCETON—Marshall [illegible] Thomas; Laurence M. Thompson [illegible] FORTY FORT—Daniel Guy Robinh[illegible] Dickinson; John Clarence Gabel; Albert Augustus Redelin; Roy Truckenmiller. GLENYON—Albert Meredith Thomas. HAZLETON—Ralph Emerson Buckley; John Rose Dyson; Peter Edward Fagan; John A. Hugo; Joseph Clement Kochczynski; Henry J. Owens; Otto Carl Reiche. KINGSTON—Abe Albert Dattner; Francis Brian Gryczka; Walter Leonard Lynn; Lewis Leonidas Rogers Jr.; Charles Layton Shafer; Frank Paul Summa; Edward Inman Wolfe. MINERS MILLS—John J. Hislop. MINERSVILLE—Hiram Grant Straub. NANTICOKE—Frederick William Heyer. NESCOPECK—Benjamin Biscombe Cook. PITTSTON—Joseph Peter Burke; August Gustav Hinrichs; James Thomas Madden; John Joseph Madden; Charles Everett Nicholson; Francis Clement O'Malley; Herbert LeRoy Ransom; Harry Rubinstein. PLAINS—William Fuller Harrison; Joseph James Kocyan. PLYMOUTH—James Edward James; Charles Frederick Netzel; William Clifton Stiff. SCRANTON—Robert Joseph Flynn. SUGAR NOTCH—John Joseph Caffrey. SWOYERSVILLE—John Leonard Lavin. WILKES-BARRE—Erick Archibald Adams; Francis Lopatto Alexaitis; Thompson McDonald Baird; Edward W. Bixby; Xavier R. Collmann; John Webster Cressler; William John Davis; Francis Edward Donnelly; William Joseph Doyle.

Wilmer Clayton Dreibelbies; Elijah M. Ellsworth; Carl Wood Espy; Stanley Leopold Freeman; Thomas Reed Gagion; Morgan Everett Griffith; Austin Ladimar Hauslohner; Cyrus Jacobosky; Francis John Krajewski.

Joseph Leo McGinley; Patrick Francis McHugh; Thomas Vincent McLaughlin; Leo Clement Mundy; Robert Harrison Murdock Jr.; Charles Hayden Phillips; William C. Reese; Simon Warren Reichard; Nathaniel Ross; George Ario Shuman; Harry Alexander Smith; Max Tischler; Raymond L. Wadhams; Clark H. Yeager. WYOMING—A. Burton Smith.

Lycoming County

ELLENTON—Barton Brown. JERSEY SHORE—Lee McCloskey Good[illegible] erson Turner. MONTOURSVILLE—[illegible] BRANCH—Galen David Castlebury. [illegible] Hull; Milfert Weaver Meyers; John [illegible] obert K. Rewalt; Robert Fitzsimmons Trainer.

McKean County

BRADFORD—William C. Hogan; Benjamin F. White Jr. ELDRED—Earle McCormick McLean. PT. ALLEGANY—Albert Jackson Colcord; William Jackson McGranor. SMITHPORT—Robert Hamilton; William Alonzo Ostrander; Everell Verni Chadwick.

Mercer County

FARRELL—William Griffith Berryhill; Lawrence Norman Breene; William Morgan Writt Jr. GREENVILLE—Frederick Oliver Batteiger; Lewis W. Glatgen; Clarence Wilson McElhaney. GROVE CITY—Edwin Marshall McConnell; Homer Smith Wilson. JAMESTOWN—Carl Henry Bailey. MERCER—William Waddle Richardson. SHARON—Orlando A. Jones; Harry William Millikin; Augustus Michael O'Brien; John Francis Spearman. SHARPESVILLE—Benjamin Allen Frye. STONEBORO—Clarence Jay Buckley.

Mifflin County

BURNHAM—Llewelyn Ivor Thomas. LEWISTOWN—Charles Milton McCoy; Frederick Augustine Rupp.

Monroe County

DELAWARE WATER GAP—John Henry Stearns. EAST STROUDSBURG—Carl [illegible] KRESGEVILLE—Robert Albert Christman. [illegible] Stewart Flagler; Harry Sydenham Van Etten. [illegible] Slee. TOBYHANNA—Alfred Lawrence Rhoads.

Montgomery County

ABINGTON—Harry A. D. Baer; Albert Nichols Baggs; Albert Vincent Crosby. AMBLER—Andrew Godfrey; Isaac High Shelly. ARDMORE—Herbert A. Arnold; James Harold Austin; Joseph Howard Cloud; Edwin Spooner Potter. BETHAYRES—Thomas Luther Coley. BRYN ATHYN

—Charles Lewis Olds. BRYN MAWR—Henry Culps Earnshaw; Francis Betterly Eveland; George Henry Miller; William Chambers Powell; David Duer Reynolds. CHESTER—Clifford Hood Arnold. CONSHOHOCKEN—Aaron Leidy Ruth. CYNWYD—Edward Foulke Corson; Theodore LeBoutillier; Charles Williamson Luders. ELKINS PARK—Charles James Cole Jr. ERDENHEIM—William Coronado Sheehan. GLENSIDE—Elmer Ellsworth Wilson. HARLEYVILLE—Russell Raudenbush Keeler. HAVERFORD—John Semple Sharpe. HUNTINGTON VALLEY—David G. Harvey. JENKINTOWN—Richard Dale Hopkinson. KULPSVILLE—Henry Nathaniel Scholl. LANSDALE—John Warren Bauman. [illegible] Samuel Jaffe; James Aloysius [illegible] dore Peters; Herbert Benjamin [illegible]: Walter A. Yeakle. NORTH [illegible] FZ—Lawrence Hughes Bloom; R [illegible] K. Thomas; William A. Tolan [illegible]. RYDAL—Frederick D. Owsley [illegible] Allen. WILLOW GROVE—Archie [illegible] burger Imhoff. WYNCOTE—Edward [illegible] S. Lucas.

Montour County

DANVILLE—James S. Hammers; Raymond Jack Hauser; John Edmund Struthers.

Northampton County

BETHLEHEM—Geo. Lord DeSchweinitz; Thomas Benj. Kern; Stuart Emmart Rauch. EASTON—George Keyser Angle; Foster Aaron Beck; Francis Stapleton Chambers; Albert Knecht Detwiller; Rollo Howard Hoey; Harvey Claude Updegrove. HECKTOWN—Sem Grim Beck. PEN ARGY[illegible] Andrew. SOUTH BETHLEHEM—Walter Josep [illegible] ence Estes Jr.; James Bertrand McAvoy; Georg [illegible] Albertus Timmons.

Northumberland County

KULPMONT—Charles Culp Cooner; Raymond Clair Fagley. MT. CARMEL—Thomas James McNelis; Edmund Roger Samuel. NORTHUMBERLAND—Stoddard S. Berg. SHAMOKIN—Adna Sawyer Jones; Oscar Eisenhart Salter; Richard Henry Simmons; James Gardner Strickland. SUNBURY—George Albert Deitrick; Charles Meade Thomas. TREVORTON—Boyd Edwin Wilkinson.

Perry County

BLAIN—Harvey Wharton Woods. LIVERPOOL—George Henry Milton Bogar. NEW BLOOMFIELD—Maurice Isaac Stein.

Philadelphia County

BYBERRY—Abram Halprin. PHILADELPHIA—Alexander Crever Abbott; Frank C. Abbott; Lewis Harry Adler Jr.; Herman Emil Albrecht; Markley Connell Albright; Emory Graham Alexander; John Alexander; Herman Bryden Allyn; Robert Swan Alston; Andrew Anders; James M. Anders; Horace B. Anderson; William Honeyford Annesley; Harold Taylor Antrim; Thomas Morrel Armstrong; James Horatin Arnett; Joseph David Aronson; Edward L. Artman; Astley P. C. Ashhurst; William E. Ashton; Eugene Jacob Asnis; Joseph Aspel; George Mason Astley; James Paul Austin; Ira Ayer.

William Wayne Babcock; Harry Bachman; Benjamin F. Baer Jr.; George Frederick Baier Jr.; William Hotchkiss Bailey; Harry W. Baily; Matthew Carroll Barnes; Harold Frederick Baker; Frederick Baldi; James Harvey Baldwin; Chester Arthur Bardsley; Abrahm I. Baron; Samuel Baron; Charles Albert Barron; Frank F. Barthmaier; Othmar F. Barthmaier; Charles Orrin W. Bartine; Sidney E. Bateman; William Bates; Frank D. Baumann; William D. Baun; Edward J. G. Beardsley; Allen Garfield Beckley; Charles Augustus Behney; *William Parks Belk*; Basil Raphael Beltran; Franklin Duffield Benedict; Albert Page Berg; David H. Bergey; Leo Heller Bernd; James Bebout Bert; John Allan Bertolet; John Percy Bethel; Sydney Geoffrey Biddle; Charles A. Bigler Jr.; Aaron Lafayette Bishop; James Douglas Blackwood Jr.; Julius Abraham Blasser; Frank Benton Block; George Homer Bloom; James Wiley Bodley; Arthur E. Bogart; John Waldo E. Boggs; Reuben Arnold Bogia; Russell Sage Boles; Zera Exley Bolin; Robert H. Bolling; Earl Danford Bond; Francis Frank Borzell; Frank Erdman Boston; Samuel Clifford Boston; Clement Remington Bowen; Charles Jacob Bowne; George Melick Boyd; Samuel Harold Boyd; Irvine Manning Boykin; William Hugh Cotter Boyle; *Charles P. Brady*; John William Bransfield; William Ramsey Bready Jr.; William Cullen Bridges; Frank A. Bridgett; Ward Brinton; Randolph G. Broaddus; Ralph Shepheard Bromer; Macy Brooks; Harold Shoemaker Broomall; Benjamin Brown; George Andrew Brown; Henry Paul Brown Jr.; Franklin Cotton Brush; David Budin; Robin Carl [illegible]; Frank Walton Burge; Joseph Patrick Burns; Michael [illegible]; Stillwell Corson Burns; Howard Sherwood Busler; Albert Butler; Benjamin Franklin Busby.

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Judson Daland; Walter John Daly; Adam Peter Dambrauckas; Clarence D'A. Daniels; *Arthur Mansbach* Dannenberg; Arthur Dare; Harold Stern Davidson; John Rumsey Davies Jr.; Edward Parker Davis; Richard Sharpless Davis; Alexander Heron Davisson; Arthur C. Dean; John B. Deaver; Percy De Long; Joseph William Dennin; Francis Joseph Dever; Robert T. Devereux; Henry Kuhl Dillard; Edward Saunders Dillon; Vincenzo Maria Diodati; John Leo Donahue; Daniel Joseph Donnelly; John Delvin Donnelly; Robert T. M. Donnelly; William Murray Donovan; George Morris Dorrance; Ernest Michael Dorsett; Rae Shepard Dorsett; William Drayton Jr.; Thomas William Druce; Amous Keeler Du Bell; Royal Elwood Durham; Guy Edward Dutton; Frank Moir *Dyson.*

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Douglas MacFarlan; Anthony S. Maciejewski; William Herbert Gordon Mackay; Charles Francis Mackel; Arthur L. MacKenzie; Louis Mackler; William Joseph MacMurtrie; Charles Percy Major; Jacob L. Manasses; Willis Fastnacht Manges; Vincent Marcucci; Jacob K. Marks; Alexander Tertius Martin; Edward Martin; James R. Martin; Wallace Marsh Martin; John Peter Maus; Cornelius Theodore McCarthy; Daniel Joseph McCarthy; Edward W. McCloskey; John Francis McCloskey; Robert S. McCombs; Albert McConaghy; James Collier McConaughey; Grayson Prevost McCouch; Francis Joseph McCullough; John Harvey McCutcheon; George Morton McCutcheon; James Edward McDowell; Joseph McFarland; George Edward McGinnis; Joseph Aloysius McGinnis; Charles Steim McGivern; Benjamin Meredith McIntire; William Page McIntosh; Robert Boyd McIver; John Joseph McKenna; Benjamin Whitehead McKenzie; Howard Allison McKnight; John Douglas McLean; Thomas M. McMillian; James William McMonagle; Richard Langdon McNeer; John E. Medley; Theodore Melnick; William Jackson Merrill; Washington Merscher; David Gregg Metheny; Samuel Alexander Sterrett Metheny; Harry Philip Metzger; Julian [illegible] Henry B. Mikelberg; Charles Scott Miller; Morris B. [illegible]than Miller; Robert Lee Miller; Thomas Grier Mil [illegible] Mills; George S. Mintzer; Joseph Myers Mirman; Alb [illegible]; Charles F. Mitchell; Henry Keller Mohler; Charles Mortimer Montgomery; Allen H. Moore; Charles H. Moore; Edward Kemp Moore; Eugene Aloysius Moore; Philip Henry Moore; Sterling Walker Moorhead; Arthur Caradoe Morgan; Marshall Blair Morgan Jr.; Samuel M. Morse; William Francis Morrison; Dudley Jay Morton; Percy Daniel Moulton; Donald Grosch Moyer; Henry G. Munson; James Gordon Murfin; Douglas Power Murphy; Eugene Clement Murphy; Frank Geo. Murphy; Francis Herron Murray; John Herr Musser Jr.; Dennis Alexis Myers.

Charles Francis Nassau; Gilbert Newburger; William Steel Newcomet; Arthur Newlin; William Nichols; William Garrison Noe; George W. Norris; Philip Norris; Charles Quay North.

John Patrick O'Brien; Andrew Allison O'Daniel; James Marye Odell; Thomas Ignatius O'Drain; Herbert Old; Abraham E. Ollensis; Joseph Francis O'Neill; Charles Aloysius O'Reilly; Abraham Maurice Ornstein; Alfred James Ostheimer; George Whitney Outerbridge; Hubley Raborg Owen; Richard Owen.

Francis R. Packard; Robert Paine; Charles S. Pancoast; *Benjamin* D. Parish; John Fisk Park; William N. Parkinson; Clarence Anderson Patten; Ross Vernett Patterson; James Hale Paul; John Davis Paul; Jacob Pearl; Ralph Pemberton; John Pennington; Oliver Hazard Perry Pepper; William Pepper; John Douglas Perkins Jr.; Joseph Ashbridge Perkins; William Harvey Perkins; Joseph Anthony Pessolano; Frederick Chalfonte Peters; William Francis Peters; Orlando H. Petty; Damon Beckett Pfeiffer; Horace Phillips; Henry Leon Picard; George Morris Piersol; Charles Edward Pike; Albert Pilkington; George Platt Pilling Jr.; Edmund Brown Piper; Michael Platt; Eli Harmon Porch;

Joseph Walter Post; William Courbet Thomas Poulson; Marion Henderson Powers; Malcolm L. Pratt; Reginald Lloyd Frees; George Elmer Price; Solomon Winfred Pleleaux; Linnaeus Hodgson Prince; Walter William Propst; John Purdy; George Morehouse Purves.

William Elkin Raken; Frank McCracken Ramsey; Alexander Randall; Edward Randall Jr.; John Herbert Reading Jr.; Howard Reed; Robert Pierson Regester; Martin Emil Rehfuss; Stanley Philip Reimann; Sidney Joseph Reppller; Charles Barnett Reynolds; John Henry Wallace Rhein; Solon Lafayette Rhode; Rooker E. Rhudy; Joseph Francis Richards; David Riesman; Harvey M. Righter; Linwood Layton Righter; Walter Bright Rile; Grady Rudisill Roberts; Benjamin Robinson; George Ernest Robinson; John Agustus Roddy Jr.; Edwin William Rodenheiser; John S. Rodman; Harry Frank Roepke; Philip S. Rosenblum; Thomas C. Ross; Charles Selmer Rottner; James T. Rugh; William Ruoff; Eugene Rush; Carlton Nelson Russell; Jacob James Rutberg; William Cyril Ryan.

Joseph Satler; Charles Dudley Saul; John Shelley Saurman; Edwin Stanton Saylor; Leo Francis Scanlan; Charles Solomon Schafer; James Evans Scheehle; Truman Gross Schnaber; Joseph Henry Schoenfeld; Guy Daniel Schoonmaker; Edward Aamin Schumann; George Jacob Schwartz; Frank William Schwartz; Charles Schwinn; Louis Segal; Morris Segal; James Stuart Seitz; Louis Seligman; Lemuel Taylor Sewell; Charles Emory Gould Shannon; Francis Patrick Shannon; Hugh Murdoch Shannon; Morris Samuel Shapiro; Abraham Maxwell Sharpe; William Ker Shea; Philip Atlee Sheaff; James A. Shelly; William Smith Shimer; Vincent Talbott Shipley; William Toy Shoemaker; Furman Robbins Shute; Edward Rufus Sibley; Alvin Siegel; Samuel Singer; Elijah H. Siter; Penn Gaskell Skillern Jr.; Ross Hall Skillern; Samuel Ruff Skillern Jr.; Alexis Dupont Smith; Allen J. Smith; Arthur Donaldson Smith; Barney Barr Smith; Mieczyslaw Edward Smoczynski; George Couch Snead; Raymond Lock Sommers; Louis A. Spaeth; John Speese; Robert Douglas Spencer; Israel Spiers; Ellis Meyer Spoont; Samuel Stalberg; Camille Joseph Stamm; Daniel E. L. Stedem; Edward Maples Steger; Edward Austin Steinhilber; Charles G. Steinmetz Jr.; Thomas Cook Stellwagen Jr.; Alfred Stengel; George L. Stephan; Charles Midwood Stiles; Francis Augustus Stiles; Cheney M. Stimson; Carl Stoepler; William Hoy Stoner; Edwin G. Stork; Albert James Storm; Philip Samuel Stout; Edward Adam Strecker; Charles M. Strotz; William Daniel Stroud; Ashbury Clarke Stroup; Samuel Booth Sturgis; Roy Dewitt Sumner; William Blaine Swartley; Joshua E. Sweet; William M. Sweet; William M. Sylvis.

Charles Hill Tait; James E. Talley; John D. Target; Isaac Samuel Tassman; William J. Taylor; Frank Wister Thomas; Thomas Turner Thomas; William H. Thomas; Ross H. Thompson; William LeRoy Thompson; Morris Clayton Thrush; Morris Hancock Tindall; John Hart Toland; Joseph James Toland Jr.; James Francis Tompkins; John A. Topper; Eugene W. Torrey; Abraham Trasoff; Philip Adam Trau; Stuart Trowbridge; Henry Tucker; Stephen Wilner Tunnell; Joseph Turner; George Kay Tweddel; Everett Allen Tyler; Ralph McGuire *Tyson*.

Harry Edward Ungerleider; George Milton Underwood; William Penn Vail; Claire F. Vale; Warren Van Derveer; William W. Van Dolsen; William Van *Korb*; Julius Richardson Vann Jr.; John Adams Van Valzah; *Louis Charles* Vattler; Norris Wistar Vaux; Henry Christian Viereck; Adolph Emil Voegelin.

Herschell Cary Walker; Thomas Holmes Walker; Warren *Walker*; Adolph Augustus Walkling; George Bush *Walp*; William *Henry* Walsh; Rudolph Albert Walther; John Francis Watkins (col.); Charles James Watson; William Newbold Watson; Charles Channing Watt Jr.; Robert Watt; Abe Kipp Weaver; Charles Henry Weber; John Malcolm Weber; Edward Weiss; William Weiss; John Murray Welch; James Ralston Wells; John Wilson West; William Francis Whelan; William Whitaker; Howard King White; Hilton Addison Wick; Henry Wilderman; Louis Russell Wiley; DeForest Porter Willard; Horace James Williams; Philip Francis *Williams*; Ernest Gotshall Williamson; Harry Bond Wilmer; George Wilson; *Samuel* Milliken Wilson; Sydney Louis Wingrade; Russell Garth Witman; Paul Carl Wittman; John Bloss Wolfe; George Bacon Wood; Walter A. Wood; Alan Churchill Woods; Arthur Roy Woods; John H. Woolridge; Lester Elgin Woomer; Whittier Howard Wright.

Arthur Wells Yale; Joseph Charles *Yaskin*; Louis Brinton Yerger; Charles Houston Young; Carl C[illegible]ssman Yount; Myron Albert Zacks; Arthur John Zimlick; Jay Donald Zulick.

PHILADELPHIA—Mortimer Warren Blair; Josiah Travilla Bunting; Jacob Morris Cahan, Claude Edward Case; Henry Carl Sangree; Stephen Dana Weeder.

Potter County

COUDERSPORT—Philip Luther Hatch; Ross H. Jones. GALETON—Hal Albert Laye. SHINGLEHOUSE—Robert Mayne Richards.

Schuylkill County

ASHLAND—Jonathan C. Biddle; Robe[illegible] Adam Constien; John Louis Hoffman; [illegible] Harrison Lewis; James Purdy Roth [illegible] Clewell. CRESSONA—George Oliver [illegible] SPRINGS—Albert Wellington Fisher; E[illegible] Marsh; Roscoe Frederick Mauser; James Jos. Monahan; Joseph Harrison Wyatt. FRACKVILLE—John Joseph D[illegible] GIRARDVILLE—Michael George Dewey; William Joseph Mona, [illegible] eph Sweeney. MAHONOY CITY—J[illegible] David Fenton. MANILA—Benjamin [illegible] -Henry Bley. PT. CARBON—John [illegible] Alfred Morton Bergstein; Gouverneur [illegible] ; James Beyel Heller; Michael Joseph McCarthy; John J. Moore; Lewis Mayer Shultz; John George Striegel; Charles V. Wad[illegible] —Joseph John Austra; John C. Miller; Leo T[illegible] John Reddy. TAMAQUA—Arthur Bowles F[illegible] rding; Oliver Kidwell Speer. TOWER CITY—I[illegible] MONT —Thomas Lawrence Doyle; Theodore [illegible] imothy Murphy; Arthur Elmer Simonis.

Snyder County

FREEBURG—Dwight Elmer Long. SELINSGROVE—Elmer Raymond Decker; Latimer Small Landis. SHAMOKIN DAM—Charles Napoleon Brostus.

Somerset County

BERLIN—Harry Glenn Eskin; Gustave Gordon Kalmutz. GARRETT—Wallace Roy McClellan. SOMERSET—James Earle Dull; John H. Ross Heminger; Snyder John Henry Louther; Fred B. Shaffer. WINDER—Bart James Smith.

Sullivan County

HILLSGROVE—James Sherman Mosher. MILDRED—James Joseph O'Connor.

Susquehanna County

BROOKLYN—Thomas Oliver Williams. FOREST CITY—Davis Reese. HARTFORD—Franklin Chapman Hill. NEW MILFORD—William Edwin Park. SUSQUEHANNA—Arthur John Denman.

Tioga County.

BLOSSBURG—Edward McIntyre Haley. LAWRENCEVILLE—Elmer John Prosper. LEETONIA—Michael Richard Long. MANSFIELD—John Horton Doane. TIOGA—Fay Xavier Field; Lee Westlake Hughes. WELLSBORO—Francis S. Bodine.

Union County

ALLENWOOD—Norman Robert Davis.

Venango County

DEMPSEYTOWN—Audley Weller Ricketts. FRANKLIN—Ardus Clair Thompson, Clyde E. Tibbens. OIL CITY—Elmer Llewellyn Dickey; Edward Glenn Henry, Philip Joseph Sheridan. POLK—Norman Stewart Reed.

Warren County

CLARENDON—William Patrick Clancy. COLUMBUS—Roy Clark Meals. SUGAR GROVE—George Monroe B. Bradshaw. WARREN—George Smith Condit, William Cleveland Miller; Melbourne Jabez Pond; Paul Bryant Stewart. YOUNGSVILLE—Frank Camden Willard.

WARREN—Ira Alphonse Darling.

Washington County

CANONSBURG—David Major Bell; Louis De Haven Donaldson; Esten Luellen Hazlett. CHARLEROI—Edwin McKay; Harry Joseph Repman. CLAYSVILLE—Elbin Jordan Johns[illegible] lon; John Joseph Kolski. ELLSWO[illegible] Alden Kamerer. MARIANNA—Fr[illegible] William S Stewart. [illegible]HELA—Harry Francis Bailey; George Kennedy Hays, C. Fra[illegible] son Wall. VESTABURGH—Perry Clare Smith. [illegible] Lennon Brennon; Robert Arthur Knox; Homer Persell Prowitt, [illegible] Herman Rinehardt; Walter Black Rogers. Richard Austin Stewart. WEST BROWNSVILLE—Howard Lester Farquhar. WESTLAND—Walter J. Shidler.

Wayne County

HAMLIN—Oscar James Mullen. HAWLEY—Frederick Anthony Lobb. HONESDALE—William Thomas McConville.

Westmoreland County

ALVERTON—George T. McNish. BOLIVAR—[illegible] BRADENVILLE—James Willard Stillmann. C[illegible] Stockberger. DERRY—Charles C. Crouse; Flo[illegible] BURG—Louis John Carrick Bailey; Hugh Bailey Barclay; Lawrence Leonard Blackburn; Walter Michael Bortz; Thomas Porter Cole; Robert Jones Hunter; Claud Worth McKee; Dennis Ray Murdock; Irwin J. Ober; Carl Freeman Pierce; William Joseph Potts; Charles Robert Reiners; John Johnson Singer. HANNASTOWN—Adam Seanor Kepple. JEANNETTE—William Trall Doncaster; Charles Archie Goble; Urban Henry Keidt; Clarence Glenn Robinson; Lee Monte Sankey; Robert Lewis Wilson. LATROBE—Nicholas E. Abbaticchio; Arthur Byron Blackburn; *Garnett P Morison*; *Stephen William* Nealon; Bert Frank Ober; Le Roy Allen Scholl. MADISON—Charles McLaughlin Sloan. MONESSEN—Ralph Edmund Conn; Clifford Farquhar; William David Hunter; Edgar Blackburn Sloterbeck; Arthur Raymond Wilson. MT. PLEASANT—John Lewis Burkholder. NEW KENSINGTON—John Walter Goodsell; Frank Clark Katherman; George Lawrence Kreiger; William Patrick Nolan; Warren Thomas O'Hara; Elmer Noah Piper; Frank Edwin Smith; J. F. Marchand Snyder; Lyden Frederick Wilson; Michael M Wolfe; Raymond Alvin Wolff. RUFFSDALE—Charles Henry Poole. SCOTTSDALE—Samuel Brown Gray; David Ernest Griffith. SOUTHWEST—David Allison Walker. TRAFFORD—Frank Milton Pogue. UNITED—Martin Wesley Freas. VANDERGRIFT—Walter J. Lace. VANDERGRIFT HEIGHTS—William Armor Copeland. YUKON—Howard Bassett Emerson.

Wyoming County

MESHOPPEN—Asa Lee Hickok. NICHOLSON—VanCleft Decker.

York County

DALLASTOWN—Clarence Wilson Frey. [illegible] Crawford. EAST PROSPECT—Serrel Roscoe E[illegible] Jeremiah Roberts. FAWN GROVE—Samuel V[illegible] ROCK—Jeremiah Fletcher Lutz; Pius Albertus [illegible] Stewart Cole Bowers. YORK—John H. Benn[illegible] Hostetter; Charles Henry May; Joseph Stank[illegible] Parker; Harry Malcolm Read; William Heinly Schellhamer; Arthur Blair Shatto; Gibson Smith; Harry David Smyser; James Elwood Throne; Louis Schneider Weaver; Francis Roman Wise.

YORK—Lawton Mervale Hartman Jr.

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HONOR ROLL

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Kent County

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RHODE ISLAND

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Bristol........	24	0.7	21,923	685	32	..	10	16	13	3
Kent..........	174	4.8	41,051	114	36	1	16	25	21	3
[1]Newport........	117	2.6	46,033	1,022	45	2	35	38	31	7
[2]Providence.....	430	0.7	494,820	821	602	18	339	506	325	88
Washington....	325	7.4	27,678	629	44	1	19	40	18	5
Totals........	1,067	1.4	631,505	832	759	22	419	623	408	106

1. Includes Newport, population 32,061; physicians 29 [M.R.C. 6].
2. Includes Pawtucket, population 60,666; physicians 44 [M.R.C. 6], also Providence, population 259,895; physicians 362 [M.R.C. 68], also Woonsocket, population 45,365; physicans 31 [M.R.C. 6].

Newport County

BLOCK ISLAND—Charles Freeman Perry. NEWPORT—Norman Brown Cole; John L. Healy; Rollo Hutchinson; Royal K. Joslin; Edward Merritt; Arthur William Stevenson.

Providence County

CENTRAL FALL—William Phillippe Bernard. EAST PROVIDENCE CENTER — Benjamin Joseph Butler. EDGEWOOD — Vernon Edgar Babington. ESMOND — John Sprague Hodgson. PASCOAG—Thomas V. Daley. PAWTUCKET — George P. Bertholet; Patrick Aloysius Durkin; Arthur Jean Baptiste Falcon; Charles H. Holt; John Francis Kenney; James Lucas Wheaton Jr. PROVIDENCE — Arthur Forest Anderson; Herbert H. Armington; Albert A. Barrows; James Hugh Bartley Jr.; Francis H. Beckett; Joseph Louis Belliotti; Frederick L. Blair; Howard Everett Blanchard; Robert H. Breslin; Byron J. Brown Jr.; Harry Henderson Brown Jr.; William H. Buffum; Alexander M. Burgess; John Thomas Burns; Ernest Allen Burrows; Bertram H. Buxton.

Alfred A. Caldarone; Remington Pendleton Capwell; Kenneth Churchill; Harry Duffield Clough; Charles Michael Collins; Nat Hawkins Copenhaver; Anthony Corvese; William Walter Cummings.

Murray Snell Danforth; Halsey De Wolf; William Henry Dyer; George A. Eckert; John Burnham Ferguson; Alvah Arlington Fisher; John Leroy Fisher; Joseph Arthur Gagnon; Henry Joseph Gallagher; George Warren Gardner; Charles Francis Gormly; Tancredi Giovanni Granata.

James Hamilton Jr.; Roland Hammond; Daniel S. Harrop; Joseph Francis Hawkins; Frederic Hussey; John William Keefe; Jacob Sleeper Kelley; Lucius C. Kingman.

Simon Geilech Lenzner; Winthrop Clinton Lincoln; Charles Leo Lynch; George Matteson; Richard Metcalf; Edward William Mulligan; William Aloysius Mulvey; Ira Hart Noyes; Joseph C. O'Connell; Walter Joseph O'Keefe; Myer Arthur Persky; Herman Canfield Pitts; Lewis B. Porter.

Joseph E. Raia; George Arnold Rice; Arthur Hiler Ruggles; Thomas Francis Scanlan; John Lazear Sly; Boris J. Sohn; William Walter Street; John W. Sweeney; Robert Holmes Whitmarsh; Roswell Storrs Wilcox; Thomas Clarke Wyman. RIVERSIDE—Theodore C. Hascall. WOONSOCKET—Cornelius Barry; Thomas F. Baxter; Edward Earle Fitzpatrick; Thomas Stephen Flynn; Walter Claver Rocheleau; Allen A. Weeden.

PROVIDENCE—Edward Halton Mason.

Washington County

WAKEFIELD—John Paul Jones; Malford Wilcox Thewlis. WESTERLY—John Champlin; Charles Albert Farrell. WICKFORD—Patrick John Manning.

SOUTH CAROLINA MEDICAL ASSOCIATION

Officers 1917-18

James A. Hayne, President	Columbia
E. T. Kelly, First Vice President	Kingstreet
S. M. Pitts, Second Vice President	Saluda
W. T. Hall, Third Vice President	Aiken
Edgar A. Hines, Secretary-Treasurer	Seneca

Councilor Districts and Officers

Chairman.—C. B. Earle, Greenville.

First District.—Charleston, Berkeley, Dorchester, Colleton, Jasper and Beaufort counties. L. O. Mauldin, Councilor, Greenville.

Second District.—Orangeburg, Bramberg, Lexington and Calhoun counties. S. E. Harmon, Councilor, Columbia.

Third District.—Saluda, Newberry, Greenwood, Abbeville and Laurens counties. T. C. R. May, Councilor, Bennettsville.

Fourth District.—Anderson, Oconee, Pickens, Greenville, Spartanburg and Union counties. W. P. Timmerman, Councilor, Batesburg.

Fifth District.—Cherokee, York, Chester, Fairfield, Lancaster and Kershaw counties. A. E. Baker, Councilor, Charleston.

Sixth District.—Chesterfield, Darlington, Florence, Marlboro, Marion, Dillon and Horry counties. J. S. Matthews, Councilor, Denmark.

Seventh District.—Richland, Sumter, Clarendon, Williamsburg, Georgetown and Lee counties. T. L. W. Bailey, Councilor, Clinton.

Eighth District.—Barnwell, Aiken, Edgefield, Saluda and Hampton counties. W. P. Timmerman, Councilor, Batesburg.

HONOR ROLL

Abbeville County

ABBEVILLE—John Ebenezer Evans; Emory Wallace Richie. CALHOUN FALLS—George Calhoun Pruitt.

Aiken County

AIKEN—Theodore Croft Stone. GRANITEVILLE—Jesse Cleveland Pearce. WAGENER—MacWilliams Webb. WINDSOR—William Robert Johnson.

Anderson County

ANDERSON—Herbert Harlan Harris; William V. Kay; Harrison Almus Pruitt; Clyde Fenton Ross; Lucius Carl Sanders; Wade Thompson. BELTON—Ashley Barrington Weathersbee. HONEA PATH—Eugene Abercrombie; James Pelham Knight; John Wesley Williams. PELZER—Carlton M. Tripp. TOWNVILLE—Jeff Newton Webb. WILLIAMSTON—Erin Erwin Epting.

SOUTH CAROLINA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Abbeville.......	678	30.8	27,935	1,269	22	..	11	17	11	3
Aiken...........	1,100	42.3	43,904	1,688	26	..	17	18	12	4
Anderson.......	758	10.8	79,670	1,138	70	..	40	55	47	13
Bamberg.......	371	23.1	19,454	1,215	16	..	8	13	10	2
Barnwell.......	890	35.6	34,309	1,372	25	..	14	16	8	4
Beaufort.......	920	83.6	29,602	2,691	11	..	4	8	3	1
Berkeley.......	1,238	247.6	23,487	4,697	5	..	4	4	..	1
Calhoun........	391	39.1	18,534	1,853	10	..	4	7	6	1
[1]Charleston.....	685	6.2	89,022	809	110	2	61	95	73	22
Cherokee.......	373	62.1	29,698	4,949	6	..	3	3	2	3
Chester.........	592	22.7	30,017	1,154	26	..	14	24	20	6
Chesterfield.....	837	41.8	30,607	1,530	20	..	13	16	8	2
Clarenden......	717	31.1	35,110	1,526	23	..	14	19	14	5
Collston........	1,333	57.9	36,804	1,600	23	..	11	15	12	4
Darlington.....	605	18.9	39,904	1,247	32	..	21	24	17	3
Dillon..........	471	26.1	25,686	1,482	18	..	14	14	3	3
Dorchester......	613	32.2	19,058	1,003	19	..	8	14	12	3
Edgefield.......	700	36.8	28,096	1,478	19	..	9	11	10	2
Fairfield........	792	49.5	29,454	1,840	16	..	8	13	2	2
Florence........	607	21.6	40,925	1,461	28	..	21	22	8	7
Georgetown....	828	138.0	22,270	3,711	6	..	5	5	1	2
Greenville......	761	40.0	79,244	4,170	19	..	10	13	10	15
Greenwood.....	508	28.2	32,636	1,813	18	..	14	15	10	6
Hampton.......	958	38.3	18,545	741	25	..	12	19	10	4
Horry..........	1,158	105.2	29,646	2,695	11	..	9	10	10	1
Jasper.........	620	206.6	7,593	2,531	3	..	2	3	..	1
Kershaw........	673	33.6	30,003	1,500	20	..	11	18	14	1
Lancaster......	515	39.6	28,358	2,181	13	..	6	9	5	1
Laurens........	690	20.9	44,593	1,351	33	..	14	20	20	4
Lee............	407	23.9	28,010	1,647	17	..	12	13	10	2
Lexington......	833	28.7	62,743	2,163	29	..	13	20	17	2
[2]McCormick.....	.....	....	10,008	909	11	..	3	3	3	1
Marion.........	529	29.3	23,386	1,299	18	..	12	16	7	4
Marlboro.......	519	27.3	33,780	1,777	19	..	12	16	16	2
Newberry.......	601	11.1	37,801	700	54	..	17	26	19	4
Oconee.........	650	34.2	30,041	1,581	19	..	8	14	13	4
Orangeburg....	1,131	19.5	36,135	623	58	..	30	40	28	6
Pickens........	539	23.4	29,836	1,297	23	..	11	19	20	4
[3]Richland.......	611	5.9	62,115	608	102	3	62	86	73	19
Saluda.........	435	36.2	22,385	1,865	12	..	5	9	9	2
Spartanburg...	765	9.1	96,534	1,149	84	2	52	71	45	5
Sumter.........	574	18.5	42,564	1,373	31	1	19	28	22	8
Union..........	492	21.3	33,120	1,440	23	..	10	20	14	4
Williamsburg...	1,006	50.3	41,962	2,098	20	..	15	15	8	4
York...........	651	14.7	52,122	1,184	44	1	27	34	30	7
Totals........	31,115	25.1	1,646,615	1,169	1,237	9	690	950	692	201

1. Includes Charleston, population 61,041; physicians 96 [M.R.C. 22].
2. County recently organized; area included with that of other counties.
3. Includes Columbia, population 35,165; physicians 94 [M.R.C. 19].

Bamberg County

BAMBERG—Augustine Smythe Weekly. OLAR—Cecil Browning Ray.

Barnwell County

BARNWELL—Edward Lawrence Patterson. WILLISTON—Axclander Stephens Blanchard; John G. Smith.

BARNWELL—David Johnson Dixson.

Beaufort County

BEAUFORT—R. W. Hughes.

Berkeley County

ST. STEPHEN—John Davis Colson.

Calhoun County

ST. MATTHEWS—Thomas Henry Symmes.

Charleston County

CHARLESTON—Ladson Dantzler Boone; Francis G. Cain; Joseph H. Cannon; Robert Cathcart; Dove Walter Green; William Henry Johnson; Charles Wilson Kollock; Thomas Ezekiel Miller Jr.; William Cyril Patrick O'Driscell; Francis Le Jau Parker; Thomas A. Pitts; Robert West Preston; James Jervey Ravenel; Robert Barnwell Rhett; William Atmar Smith; Julius C. Sosnowski; E. H. Sparkman; Augustus R. Taft; Pressley S. Thomas John C. Wiesters; Lester Arnold Wilson; Joseph D. Guess.

Cherokee County

BLACKSBURG—Adolphus Lamar Little; Victor Marion Roberts. GAFFNEY—Robert Thrift Ferguson.

Chester County

CHESTER—Lucius Gaston Gage; Samuel Glenn Love; Ralph Hope McFadden; Charles Andrew McLurkin; Hugh Madison Ross Jr.; Hilland Bernard Thomas.

Chesterfield County

CHESTERFIELD—Robert Lee Gardner. JEFFERSON—Joseph E. Thomas.

Clarendon County

JORDAN—Oscar Winborne Nettles. MANNING—Edward Wilson Barron; Charles Blum Geiger. PINEWOOD—Frank Madison Harvin. TURBEVILLE—Isham Watson Pittman.

Colleton County

COTTAGEVILLE—Connor J. Miller. WALTERBORO—William Boswell Ackerman; Charles Isham Goodwin. WIGGINS—Robert Victor Ackerman.

Darlington County

DARLINGTON—Oscar Albertus Alexander; Julian Terrell Coggeshall. LAMAR—Gary Lacy Boykin.

Dillon County

DILLON—Lawrence Rosboro Craig. LAKE VIEW—William Evans Lester. LATTA—Everett Carlisle Major.

Dorchester County

RIDGEVILLE—Collins Elihu Smith. SUMMERVILLE—Francis J. Carroll; William Frederic Graham.

Edgefield County

JOHNSTON—Aubin Tilden King; William C. Stone.

Fairfield County

ROCKTON—Reuben Gilliam Hamilton. RIDGEWAY—James Furman Dobson.

Florence County

CLAUSSEN—John Rudolph Claussen. FLORENCE—John M. Barnwell; C. E. Houston; Lonnie Malcolm McMillan; John D. Smyser; Rosko Jerome Wilson. LAKE CITY—Julius David Eaddy.

Georgetown County

GEORGETOWN—Samuel S. Bruington; Morgan Preston Moorer.

Greenville County

GREENVILLE—James Ernest Daniel; Curran Bertram Earle; Charles Wofford Gentry; Carl Albert Neves; James Lawrence Orr Jr.; Walker Haliburton Powe; James Marvin Wallace; William Edward White; Thomas Robert Waters Wilson. GREER—Theron Otis Walker; Landrum W. Wood. MAULDIN—Dalmar Rowley Blakely. PIEDMONT—Joe Pell Jewell. SIMPSONVILLE—Maney Coke Smith. TRAVELLERS REST—Charles Prue Benson.

Greenwood County

GREENWOOD—Arthur D. Burnett; John D. Harrison; John Francis Simmons. NINETY SIX—James Sample Fouche; John Holloway Pratt.

Hampton County

ESTILL—Preston Joseph Johnston; Johnston Peeples. FURMAN—John King Garnett Tuten. SCOTIA—Charles Carroll Fishburne. TROY—Raymond Neel Davis.

Horry County

CONWAY—James Arthur Norton.

Jasper County

RIDGELAND—Isaac Hobart Grimball.

Kershaw County

LUGOFF—William J. Burdell.

Lancaster County

HEATH SPRINGS—Melvin S. Storer.

Laurens County

CLINTON—Leslie St. Clair Hays; Theodore James Peake. CROSS HILL—George Fred Klugh; Claude Benjamin Mills.

Lee County

BISHOPVILLE—Lacy Wood Corbett; Harvey McNair McLure.

Lexington County

BATESBURG—Joseph Benjamin Edwards. LEESVILLE—*Carl Lafayette* Able.

Marion County

MARION—Carroll Sumner Howell; George Madison Truluck. MULLINS—Alex. Brailsford Jr. NICHOLS—Claudius Franklin Bullock.

Marlboro County

BENNETTSVILLE—Lawrence Randolph Kirkpatrick; *Daniel Deronda* Strauss.

McCormick County

CLARKS HILL—Ben Tillman Sharpton.

Newberry County

NEWBERRY—William *Ernest Bickley*; *Frank* Duano Mower; John Bachman Setzler. WHITMIRE—Thomson Butler Woods.

Oconee County

CLEMSON COLLEGE—Thomas *Craig Redfern*. NEWRY—William Clinton Marett. WALHALLA—Bayliss Frank Sloan; John David Verner Jr.

Orangeburg County

EUTAWVILLE—Rembert James Coner. NEESES—Grover Cleveland Bolin. ORANGEBURG—[illegible]tgomery; Henry P. Moore; Henry [illegible] SPRINGFIELD—[illegible] D. Busbee.

Pickens County

EASLEY—James Carl Pepper; John Wallace. *LIBERTY*—Clark Wales Smith. *PICKENS*—Lewis Franklin Robinson.

Richland County

COLUMBIA—[illegible] Baggot; Clarendon Witherspoon *Barron*; Ge[illegible] Boling; Francis A. Coward; Robert Blakely Du[illegible] Cyrus Galloway; Emmet Merrick Harrison; James A. Hayne; George Kaigler Nelson; Lindsay Peters; James E. Poore; Floyd Dwight Rodgers; Isadore Schayer; John La Bruce Ward; Carl Alexander West; Samuel Edward Wheeler; Marion Hay Wyman; Edward C. L. Adams.

Saluda County

MONETTA—Boldridge Edward Kneece. *RIDGE SPRING*—Laomi Josiah Smith.

Spartanburg County

CAMPOBELLO—Charner LeRoy Stevens. FAIRMONT—Thurman Gregory Wright. SPARTANBURG—Walter Brackett Lancaster; Cecil *Rigby*; William O. Wrightson.

Sumter County

HAGOOD—[illegible]lichampe Moore; Frank Butler Sanders. [illegible] W. Corbett. OSWEGO—Benjamin Franklin [illegible] Hamilton Burgess; William Sydney Burgess; Carl Belden Epps; William W. Felder.

Union County

BUFFALO—Fitzhugh Prothero Salley. LOCKHART—William Stewart McMurray. SANTUCK—James Thomas Jeter. UNION—Theodore Maddox.

Williamsburg County

KINGSTREE—Clarence David Jacobs. NESMITH—Allston Moore Willcox. OUTLAND—Oscar Lucas Bruorton.

York County

CLOVER—James W. Campbell; Ebenzer Widman Pressly. McCONNELLSVILLE—John Walker Moore. ROCK HILL—William Robert Blackmon; Robert Hope Crawford. SHARON—James Luther Blair. YORK—Phillip Williams Hunter.

SOUTH DAKOTA STATE MEDICAL ASSOCIATION

Officers 1917-18

H. J. G Koobs, President ....Scotland
D. L. Scanlon, First Vice President.... ....Volga
Harry T Kenney, Second Vice President.........................Pierre
R. D. Alway, Secretary-Treasurer...............................Aberdeen

Councilor Districts and Officers

Wm. Edwards, President, Bowdle; Harry T. Kenney, Secretary, Pierre.

First (Aberdeen) District.—Roberts, Marshall, Day, Brown, Spink, Faulk, Edmonds, McPherson, Campbell, Walworth, Potter, Dewey, Grant (north half), and Corson counties. Wm. Edwards, Councilor, Bowdle.

Second (Watertown) District.—Codington, Grant (south half), part of Deuel, Hamlin (north half) and Clark counties. L. G. Hill, Councilor, Sioux Falls

Third (Brookings) District.—Brookings, Kingsbury, Lake (north half), Miner (north half) and Beadle counties. N. K. Hopkins, Councilor, Arlington.

Fourth (Pierre) District.—Hand, Hyde, Hughes, Sully, Buffalo, Stanley and Tiebach counties H T Kenney, Councilor, Pierre.

Sixth (Mitchell) District.—Davison, Hanson, McCook (west half), Aurora, Brule, Lyman, part of Hutchinson, part of Turner, part of Sanborn and Jerauld counties. Fred Treon, Councilor, Chamberlain.

Seventh (Sioux Falls) District.—Minnehaha, McCook (east half), Lincoln, part of Moody and part of Turner counties. G. G. Cottam, Councilor, Sioux Falls

Eighth (Yankton) District.—Yankton, Clay, Union, Bon Homme, part of Turner, Douglas, Charles Mix, part of Hutchinson, Gregory, Tripp and Todd counties James Roane, Councilor, Yankton.

Ninth (Black Hills) District.—Butte, Lawrence, Meade, Fall River, Bennett and Pennington counties. F. E. Ashcroft, Councilor, Deadwood.

Tenth District.—H R. Kenaston, Councilor, Bonesteel.

HONOR ROLL

Aurora County

WHITE LAKE—John Clifford Rogers.

Beadle County

HITCHCOCK—Alvin Perry Scheib. HURON—Tillison James Wood; Oscar Reilly Wright

Bon Homme County

SCOTLAND—Gustav Adolph Landmann; Isaac Wellman Leighton. TYNDALL—Eugene Herbert Boon.

Brookings County

AURORA—Jess W. Foster. BROOKINGS—Roscoe Roby Fisk. BRUCE—George Edward

Brown County

ABERDEEN—William E. Clark; James Harry Vetter. GROTON—John Edward Dunn

Brule County

CHAMBERLAIN—Robert Archie Crawford.

Buffalo County

CROW CREEK—Archie McCallister.

Butte County

BELLE FOURCHE—Alexander Otto Fasser; Oscar William Tulisalo. NISLAND—*Francis Everett Townsend.*

Charles Mix County

DANTE—[illegible] *Bonza*. LAKE ANDES—Charles Seymour [illegible] PLATTE—[illegible] T. Anderson; Cleveland F. Brooks. WAGNER [illegible]

Clay County

VERMILION—John Lawrence Brookman; Iver Stoland.

Codington County

[illegible] William Mullen. HENRY—James Day Edgar. [illegible] Thomas Read. WATERTOWN—William August Parsons.

Davison County

MITCHELL—William Reaves Ball; Edward William Jones.

Day County

WEBSTER—Albert Edward Brown; Mads Johnson Fiksdal.

Douglas County

ARMOUR—Frank Delos Wilson.

Fall River County

HOT SPRINGS—James Acker Mattison.

Grant County

MILBANK—William James Ferguson; Charles Hugo McKenna.

Gregory County..

BURKE—Robert Joseph Quinn.

Hamlin County

CASTLEWOOD—James Harry Crawford.

Hand County

MILLER—Port McWhorter. REE HEIGHTS—James Franklin Paddleford.

SOUTH DAKOTA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total, No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
¹Armstrong	.....	.....	231	.....	..	..	..	..	..	..
Aurora	719	143.8	6,990	1,398	5	..	5	5	5	1
Beadle	1,250	59.5	16,182	770	21	..	10	17	11	3
¹Bennett	1,291	.....	1,488	.....	..	..	..	..	..	..
Bon Homme	573	38.2	11,775	785	15	..	7	13	8	3
Brookings	791	52.7	16,131	1,075	15	..	5	11	6	3
Brown	1,750	53.0	26,012	788	33	..	21	31	28	3
Brule	837	93.0	6,344	704	9	..	5	7	6	1
Buffalo	479	239.5	1,485	742	2	1	1	2	1	1
Butte	2,289	228.9	6,280	628	10	..	2	7	2	3
Campbell	774	387.0	4,888	2,444	2	..	1	2	..	..
Charles Mix	1,134	81.0	14,790	1,056	14	..	9	13	4	5
Clark	974	108.2	10,670	1,185	9	..	5	5	5	..
Clay	403	36.6	9,420	856	11	1	6	8	7	2
Codington	701	27.0	15,664	602	26	..	13	20	22	5
Corsen	2,526	1263.0	3,419	1,709	2	..	..	1	1	..
Custer	1,573	524.3	3,020	1,006	3	..	..	3	1	..
Davison	432	22.7	13,597	715	19	..	10	14	13	2
Day	1,061	58.9	14,235	790	18	..	10	15	13	2
Deuel	632	105.3	8,856	1,476	6	..	5	5	2	..
Dewey	1,907	317.8	2,271	378	6	..	1	4	1	..
Douglas	435	72.5	6,741	1,123	6	1	3	4	3	1
Edmunds	1,158	193.0	6,498	1,083	6	..	2	5	4	..
Fall River	1,756	125.4	5,282	377	14	..	6	11	6	1
Faulk	1,018	127.2	5,265	658	8	1	1	6	3	..
Grant	691	115.1	10,548	1,758	6	..	3	5	5	2
Gregory	1,032	79.4	11,919	916	13	1	3	9	9	1
Haakon	4,100	1025.0	3,553	888	4	..	..	3	2	..
Hamlin	520	65.0	7,925	990	8	..	5	6	5	1
Hand	1,426	285.2	7,036	1,407	5	..	1	3	1	2
Hanson	432	86.4	6,349	1,269	5	..	1	4	3	1
Harding	2,682	894.0	5,075	1,691	3	..	2	3	..	1
Hughes	759	108.4	5,055	722	7	..	4	6	5	1
Hutchinson	817	81.7	13,429	1,342	10	1	7	8	6	1
Hyde	866	216.5	2,685	671	4	..	3	3	2	1
Jackson	2,120	530.0	2,077	518	4	..	1	4	1	..
Jerauld	531	106.2	5,340	1,068	5	..	3	5	3	1
Jones	.....	.....	2,378	1,189	2	..	1	2	2	1
Kingsbury	814	67.8	11,947	995	12	..	7	9	10	3
Lake	562	35.1	12,360	772	16	..	8	12	6	1
Lawrence	797	28.5	19,694	703	28	..	18	23	18	5
Lincoln	574	41.1	13,930	1.071	13	..	11	12	5	1
Lyman	2,625	656.2	7,412	1,853	4	..	3	3	1	..
McCook	573	63.7	10,195	1,021	9	..	7	8	4	1
McPherson	1,157	385.7	6,848	2,282	3	..	1	3	3	..
Marshall	889	127.0	8,459	1,065	7	..	5	6	5	2
Meade	3,491	498.7	28,724	1,246	7	..	6	6	2	4
¹Mellette	1,228	.....	4,168	.....	..	..	..	..	..	..
Miner	568	94.7	8,154	1,259	6	..	4	4	3	..
Minnehaha	815	13.8	41,043	695	59	3	33	45	48	3
Moody	527	75.3	10,111	1,444	7	..	1	5	3	1
Pennington	2,792	174.5	9,004	562	16	1	6	11	5	2
Perkins	2,914	364.2	11,348	5,674	8	..	5	6	2	..
Potter	898	179.6	3,648	729	5	..	1	5	2	1
Roberts	1,111	85.5	15,987	1,229	13	..	8	12	2	4
Sanborn	576	115.2	7,708	1,541	5	..	3	3	2	1
¹Shannon	.....	.....	964	.....	..	..	..	..	..	..
Spink	1,511	65.7	15,981	694	23	..	10	16	17	4
Stanley	4,156	415.6	2,251	2,251	1	..	1	1	..	..
Sully	1,058	105.8	2,462	2,462	1	..	1	1	1	..
Todd	1,279	639.5	2,505	1,252	2	..	1	2	..	1
Tripp	1,629	325.8	11,094	2,218	5	..	5	5	4	3
Turner	617	34.3	14,978	832	18	2	12	13	9	1
Union	452	34.0	11,761	904	13	1	4	8	7	3
Walworth	742	106.0	6,488	926	7	..	4	6	3	..
¹Washabaugh	.....	.....	1,146	.....	..	..	..	..	..	..
¹Washington	.....	.....	1,157	.....	..	..	..	..	..	..
Yankton	523	24.9	15,588	742	21	2	9	18	14	3
Ziebach	1,985	198.5	2,571	2,571	1	1	..	..	..	..
Totals	80,246	124.4	597,331	909	646	16	335	513	372	92

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1. Armstrong, Bennett, Mellette, Shannon, Washabaugh and Washington counties, no physicians reported.

Hanson County

FULTON—George Henry Lowthian.

Harding County

BUFFALO—Daniel Deronda Raber.

Hughes County

PIERRE—Harry Thomas Kenney.

Hutchinson County

PARKSTON—James Gilbert Carney.

Hyde County

HIGHMORE—Glen Vernon Sigler.

Jerauld County

WESSINGTON SPRINGS—Fred Floyd Keene.

Jones County

MURDO—William Moody Hunt.

Kingsbury County

DE SMET—Burt Alvano Dyar. IROQUOIS—Charles Hall Cowgill. OLDHAM—Gebhard Joseph Long Jr.

Lake County

MADISON—Emerson William Goldman.

Lawrence County

DEADWOOD—Felix E. Ashcroft; Thomas W. Moffitt; Maurice Orear Pemberton. LEAD—William Edward Fehliman; Charles Koenigsberger.

Lincoln County

CANTON—Roy F. Sackett.

Marshall County

BRITTON—Frederick Otto Kaps; Dennis William Sullivan.

McCook County

MONTROSE—Lindsay Z. Fletcher.

Meade County

FAITH—Harry Charles Durkee. FT. MEADE—Luke Baker Peck. STURGIS—John Wallace Brackett; John Dosher Brooks.

Minnehaha County

SIOUX FALLS—Thomas Edward Jones; George Alfred Stevens; Thomas Gottfried Thompson.

Moody County

FLANDREAU—Frederick Angier Spafford.

Pennington County

RAPID CITY—William S. Bentley; Henry James Toppin Ince.

Potter County

GETTYSBURG—John Joseph Mertens.

Roberts County

SISSETON—James Everett Dyson; Wallace Isaac Longstreth. WHITE ROCK—Sigfred Engh. WILMOT—Carl Norman Harris.

Sanborn County

WOONSOCKET—Floyd Smelson Kidd.

Spink County

CONDE—Lester Richard Herman. DOLAND—Charles Augustus Williams. REDFIELD—Jacob Gemmill Chichester; Dewey Sutton.

Todd County

ROSEBUD—Leo Louis Elliott.

Tripp County

CARTER—Robert M. Malster; Carl O. Reed. WINNER—Archie Percival Kimball.

Turner County

PARKER—Harley Dore Newby.

Union County

BERESFORD—Arastus Vernon Elliott. ELK POINT—John Henkin; Walter Chafey Moodie.

Yankton County

VOLIN—Irving Miller. YANKTON—Frank Conger Smith; James Augustus Wood.

TENNESSEE STATE MEDICAL SOCIETY

Officers 1917-18

E. T. Newell, President..........Chattanooga
Vice Presidents:—
H. M. Cass..........*Johnson City*
T. G. Pollard..........*Nashville*
W. O. Sullivan..........Newbern
Olen West, Secretary..........Nashville
J. F. Gallagher, Treasurer..........Nashville

Councilor Districts and Officers

First District.—Claiborne, Hancock, Hawkins, Sullivan, Grainger, Greene, Washington, Carter, Unicol, Johnson, Cocke and Sevier counties. C. P. Fox, Councilor, Greenville.

Second District.—Scott, Campbell, Union, Anderson, Roane, Knox, Loudon, Blount, Jefferson and Hamblen counties. S. R. Miller, Councilor, Knoxville.

Third District.—McMinn, Monroe, Polk, Meigs, James, Bradley, Hamilton, Marion, Sequatchie, Bledsoe, Van Buren, White, Warren, Grundy and Franklin counties. J. A. Hardin, Councilor, Sweetwater.

Fourth District.—Rhea, Cumberland, Morgan, Fentres, Putnam, Overton, Pickett, Jackson, Clay, Smith, Macon, Trousdale, Wilson and Sumner counties. Z. J. Shipley, Councilor, Cookesville.

Fifth District.—Lincoln, Marshall, Bedford, Rutherford, Cannon, De Kalb, Coffee and Moore counties. F. B. Reagor, Councilor, Shelbyville.

Sixth District.—Stewart, Montgomery, Robertson, Cheatham and Davidson counties. W. C. Dixon, Councilor, Nashville.

Seventh District.—Houston, Humphries, Dickson, Williamson, Hickman, Maury, Lewis, Lawrence, Giles and Wayne counties. M. A. Beasley, Councilor, Hampshire.

Eighth District.—Carroll, Henderson, Madison, Decatur, Perry, Hardin, Chester, McNairy, Henry and Benton counties. A. B. Dancy, Councilor, Jackson.

Ninth District.—Weakley, Gibson, Obion, Lake, Dyer, Lauderdale, Crockett and Haywood counties. R. W. Griffin, Councilor, Tiptonville.

Tenth District.—Tipton, Shelby, Fayette and Hardeman counties. W. T. Black, Councilor, Memphis.

HONOR ROLL

Anderson County

ANDERSONVILLE—Fred Oscar Stone. COAL CREEK—Carl Ralph Martin.

Bedford County

SHELBYVILLE—Samuel Shaw Moody. UNIONVILLE—Daniel Carr Haggard. WARTRACE—George Elmer Horton.

Benton County

CAMDEN—James Max Smith.

Blount County

MARYVILLE—James Ellis Carson; Sam Wright Donaldson.

Bradley County

CLEVELAND—Thos. E. P. Chambers; Dabney Minor; Carl Thomas Speck.

TENNESSEE

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Anderson	337	11.2	17,777	592	30	..	8	13	7	2
Bedford	514	10.7	22,667	755	30	..	15	21	4	3
Benton	456	26.8	12,864	758	17	..	2	5	..	1
Bledsoe	391	55.8	6,329	904	7	..	3	6	..	..
Blount	371	17.8	21,979	655	32	1	13	26	18	2
Bradley	336	13.4	16,756	670	25	..	10	17	9	3
Campbell	464	11.9	31,738	967	39	..	19	21	22	7
Cannon	268	24.4	10,825	984	11	1	4	5	3	..
Carroll	619	15.9	23,971	614	39	..	19	25	25	3
Carter	253	18.6	22,138	1,165	19	..	6	15	15	1
Cheatham	311	17.5	10,831	658	17	..	4	9	..	..
Chester	313	26.1	9,000	757	12	..	6	6	7	1
Claiborne	468	15.1	25,533	824	31	..	11	20	6	2
Clay	251	28.2	9,437	1,047	9	..	2	6	2	..
Cocke	427	22.5	19,580	1,030	19	..	6	11	2	3
Coffee	443	19.3	15,552	676	23	..	6	14	13	3
Crockett	267	9.9	15,228	601	27	..	15	19	11	1
Cumberland	655	109.2	10,068	1,678	6	..	3	4	4	..
[1]Davidson	511	1.3	168,912	444	380	5	216	201	148	86
Decatur	288	32.0	10,093	1,121	9	..	4	6	6	..
Dekalb	311	19.4	15,434	964	16	..	7	10	1	2
Dickson	549	23.9	20,919	909	23	..	11	17	11	1
Dyer	500	9.6	30,600	588	52	..	31	42	37	2
Fayette	618	18.2	30,662	901	34	..	23	31	19	5
Fentress	486	81.0	8,421	1,404	6	..	4	4	..	..
Franklin	575	16.0	20,564	571	36	..	15	23	11	3
Gibson	633	10.5	43,253	720	60	..	26	36	27	5
Giles	628	13.9	32,629	725	45	..	21	25	26	6
Grainger	307	27.9	13,888	1,262	11	..	5	7	4	2
Greene	613	15.7	31,436	806	39	..	18	27	23	3
Grundy	375	41.7	8,701	966	9	..	3	7	8	..
Hamblen	158	7.9	14,321	716	20	..	11	16	5	2
[2]Hamilton	409	2.1	109,393	560	195	3	102	148	112	20
Hancock	228	57.0	10,778	2,694	4	..	2	3	2	..
Hardeman	697	20.5	23,036	677	34	..	22	27	16	3
Hardin	582	25.3	17,521	761	23	..	10	13	1	1
Hawkins	482	13.4	23,587	655	36	..	8	16	15	1
Haywood	508	16.4	26,186	852	31	..	13	23	11	7
Henderson	536	17.2	17,030	549	31	..	11	15	28	2
Henry	626	17.8	26,328	752	35	1	15	21	14	4
Hickman	570	35.6	16,642	1,640	16	..	6	9	8	2
Houston	197	19.7	6,224	622	10	..	2	6	2	..
Humphreys	451	22.5	14,279	713	20	..	2	7	2	..
Jackson	301	18.7	15,036	929	16	..	3	11	12	..
James	165	23.6	5,210	744	7	..	5	7	..	1
Jefferson	312	10.4	17,755	591	30	..	8	22	22	1
Johnson	294	26.7	15,089	1,371	11	..	6	8	10	1
[3]Knox	504	2.6	108,702	569	191	1	101	147	115	32
Lake	122	11.1	9,677	879	11	..	8	11	8	1
Lauderdale	456	10.8	21,105	502	42	1	23	37	30	5
Lawrence	611	23.5	19,150	736	26	..	16	18	1	2
Lewis	286	57.2	7,184	1,436	5	..	1	3	..	..
Lincoln	587	14.3	25,908	703	41	..	14	26	26	4
Loudon	219	12.9	15,637	913	17	..	8	12	8	2
McMinn	432	21.6	22,420	1,121	20	..	10	15	11	2
McNairy	588	21.0	16,356	584	28	..	12	20	15	..
Macon	286	26.0	15,783	1,434	11	..	4	7	7	..
Madison	552	7.2	41,563	539	77	1	40	50	35	6
Marion	504	21.9	19,943	867	23	..	12	16	4	4
Marshall	378	14.5	16,872	648	26	..	6	6	21	2
Maury	582	9.1	40,456	663	61	1	26	42	36	10
Meigs	199	14.2	6,131	437	14	..	4	5	..	1
Monroe	674	39.6	22,271	1,310	17	..	13	15	11	1
Montgomery	516	13.2	33,672	863	39	..	15	29	14	3
Moore	141	70.0	4,800	2,400	2	..	..	..	..	..
Morgan	529	44.1	12,822	1,068	12	..	10	12	8	..
Obion	552	10.4	31,157	587	53	..	15	31	27	5
Overton	446	27.9	17,678	1,104	16	..	7	11	8	..
Perry	487	32.5	8,825	588	15	..	7	11	1	3
Pickett	162	54.0	5,087	1,695	3	..	1	2	..	..
Polk	432	24.0	16,128	846	18	..	10	11	6	..
Putnam	404	14.4	22,308	796	28	1	9	18	12	1
Rhea	365	19.2	16,206	852	19	..	10	16	9	1
Roane	388	11.1	22,948	655	35	1	13	26	20	4
Robertson	455	13.4	25,783	758	34	..	11	22	21	5
Rutherford	614	13.1	33,199	706	47	..	23	33	23	6
Scott	550	55.0	14,310	1,431	10	..	8	8	6	1
Sequatchie	264	88.0	4,840	1,613	3	..	2	2	..	..
Sevier	587	32.6	22,496	1,249	18	..	9	11	7	1
[4]Shelby	801	1.9	219,090	4,661	470	3	310	391	228	113
Smith	296	9.9	18,548	618	30	..	11	18	15	..
Stewart	449	37.6	14,860	1,238	12	..	8	10	..	..
Sullivan	436	6.8	30,444	475	64	..	26	42	37	8
Sumner	558	15.5	25,621	711	36	..	19	28	14	7
Tipton	442	9.8	29,591	657	45	..	28	34	27	3
Trousdale	106	9.6	5,874	531	11	..	4	7	2	..
Unicoi	201	22.3	8,185	909	9	..	4	8	7	..
Union	235	15.7	11,414	760	15	..	8	9	..	1
Van Buren	293	293.0	2,784	2,784	1	..	..	..	..	..
Warren	423	21.1	16,624	831	20	..	9	14	7	1
Washington	325	7.2	33,611	746	45	..	23	32	28	6
Wayne	749	57.6	12,062	927	13	..	4	8	6	..
Weakley	580	12.6	31,929	694	46	..	18	32	20	4
White	363	20.2	16,342	907	18	..	6	11	13	2
Williamson	586	17.7	24,213	733	33	..	15	22	15	3
Wilson	613	17.0	25,394	705	36	..	16	25	13	2
Totals	53,282	15.3	2,238,729	646	3,481	20	1,733	2,235	1,660	444

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1. Includes Nashville, population 118,136; physicians 362 [M.R.C. 86].
2. Includes Chattanooga, population 61,575; physicians 152 [M.R.C. 19].
3. Includes Knoxville, population 39,052; physicians 155 [M.R.C. 28].
4. Includes Memphis, population 151,877; physicians 408 [M.R.C. 109].

Campbell County

BLOCK—Samuel D. Johnson; Clyde Russell. CARYVILLE—Robert Lee Gallaher. LA FOLLETTE—Wm. Harold Delap; Thomas Jennings; Edgar Sharon Turner.

WESTBOURNE—Edward Lee Inman.

Carroll County

HUNTINGDON—Roy Archie Douglas; James H. McCall. TREZEVANT—Tate Benton Collins.

Carter County

ELIZABETHTON—Geo. Edward Campbell.

Chester County

HENDERSON—Wm. Thos. Buck.

Claiborne County

CUMBERLAND GAP—James H. S. Morison. NEW TAZEWELL—James Caloway Carr.

Cocke County

NEWPORT—John Erwin Hampton; William Edgar McGaha; John Oscar Woods.

Coffee County

BEECH GROVE—Homer Clytus Wysong. HILLSBORO—Walter Leo McCaleb. TULLAHOMA—Charles Marion Griffith.

Crockett County

BELLS—Elisha Farrow.

Davidson County

NASHVILLE—Chas. Franklin Anderson; Rufus Herve Bacote; Richard A. Barr; Roy Wallace Billington; John Frey Binkley; James Elliott Blayders; James Brew Jr.; Frank Benton Brewer; Charles Watkins Brown; Emmett Ezra Brown; Robert Bates Brown; James Lesslie Bryan; George Washington Bugg; Lucius E. Burch.

Jere W. Caldwell; Maurice L. Connell; Samuel C. Cowan; Carl R. Crutchfield; Albert S. Dabney; Owen Scott Deathridge; William Clarence Dixon; Frank Bumpass Dunklin; Leonard Wright Edwards; Howard Merchant Francisco; Ernest Mitchell Fuqua.

Thurman Boyd Givan; Fleetwood Gruver; William David Haggard; Oliver Leslie Hambrick; Albert Wynne Harris; Morris D. Hartman; George Abram Hatcher; Sterling Buchanan Hinton; James Harvill Hite; David Hamilton James; Jesse Arvin James; Andrew Blucher Jones; William Gilliam Kennon; Leon Martin Lanier; John Henry Lassiter; Jesse Leonidas Leach; John Moore Lee; James Dunn Lester; Joseph Henry Litterer.

John Owsley Manier; Isiah Herbert Martin; Elmer Stephens Maxwell; William Michael McCabe; Herbert H. McCampbell; Frank McClenton; James Hunter McClure; Matthew Charles McGannon; Thomas Dempsey McKinney; Thomas Orville Menees; Thos. W. Menees; Edwin Evans Miller; Charles Samuel Morrow; Eugene Orr; David Richards Pickens; Rueben Lester Richardson; Joseph Ward Russell.

Joseph Perry Schell; Enoch Corruth Scale; Matthew Wilson Searight; Harrison H. Shoulders; Larkin Smith; Joe Harold St. John; Hugo Benton Stokes; Claude Chauncey Sullivan; Robert E. Sullivan Otho Buel Taylor; Holland McTyeire Tigert; Harlin Gulford Tucker; Henry Harvey Walker; Charles Douglas Walton; William R. Ward; Leo Edward Welker; Hugh Dickson White; William Henry Witt; Thomas Volney Woodring; Randall Everett Wyatt. WOODBINE—Constantine Perkins Waller.

NASHVILLE—William Porter Bowen; Oval Nelson Bryan; John Ewell Hall, David Robertson Neil.

De Kalb County

ALEXANDRIA—Leon D'Castro Cotten; James Benton Neil.

Dickson County

BURNS—Henry Petway Spencer.

Dyer County

BOGOTA—D. T. Austin. DYERSBURG—Robert Lyle Motley Jr.

Fayette County

LACONIA—William Herman Ballard. MOSCOW—Orville Hulcee Cribbins; Compton Ney Crook. OAKLAND—Cleveland Payne. SOMERVILLE—John W. Morris.

Franklin County

COWAN—John Hartwell Marable. SEWANEE—Reynold Marvin Kirby-Smith; Allen Lawrence Lear.

Gibson County

BRADFORD—Starnes E. Walker. HUMBOLDT—John Walter Oursler. MEDINA—Thomas Munsey Harper. TRENTON—Kuebel Bryant; Edward Corter Matthews.

Giles County

ASPEN HILL—Rogers Nathaniel Herbert. BETHEL—Louis A. Edmundson. ELKTON—Wendell Phillips Baugh; Joe Bradford Wright. FRANKEWING—Walter Joe Johnson. PULASKI—John Henry Morris.

Grainger County

IDOL—Barney Langford McDonald. TAMPICO—Granville Dexter LeQuire.

Greene County

BAILEYTON—Chas. Young Bailey. GREENVILLE—Jas. Franklin Lane. MOHAWK—Lloyd Elmer Dyer.

Hamblen County

MORRISTOWN—Claude J. Fuller; William Erastus Howell.

Hamilton County

CHATTANOOGA—Herman Jackson Barnett; Eli Milton Delay; William Wuche Dickey; William J. Hillas; Eugene R. Hochstetter; Albert Thompson Ingalls; Hiram Adoniram Laws Jr.; Stewart Lawhill; Samuel Herman Long; Fred Cameron McIsaac; James Douglas McPheeters; Ray Morrison Means; Edward Dumbar Newell; Leopold Shumacker; Chester Arthur Skelton; John Black Steele; Davis King Summers; Carl August Gunner Sundstrom. EAST CHATTANOOGA—Jesse Cleveland Eldridge.

Hardeman County

BOLIVAR—Victor H. Miller; William Claude Sain. WHITEVILLE—Thomas Whitson Rhodes.

Hardin County

GILLISES MILLS—Granville Inman Walker.

Hawkins County

CHURCH HILL—Guy McClellan Reeser.

Haywood County

BROWNSVILLE—Thomas Crowder Chapman; Clarence M. Gloster; William Vesey Pruett; Charles Edwin Sevier. RUDOLPH—John Montgomery Gill. STANTON—William B. Nash; Lonnie Otto Wilkerson.

Henderson County

DARDEN—E. Gecovia Maxwell. LEXINGTON—Samuel Thomas Parker.

Henry County

COTTAGE GROVE—Charles Headley. PARIS—George Randle McSwain; Milton C. Wiggins; William J. Ezell.

Hickman County

CENTERVILLE—William Kenneth Edwards. LYLES—James Clagett Fly.

James County

APISON—Harry Edgar Hall.

Jefferson County

JEFFERSON CITY—Walter Samuel E. Hardy.

Johnson County

LAUREL BLOOMERY—Walter Winfield Widener.

Knox County

BALL CAMP—William R. Cross. BEARDEN—Hugh Lawson Peters. KNOXVILLE—Harley Leland Acuff; Herbert Acuff; Hugh Walden Allan; *John David Carr*; *Daniel W. Crawford*; *Robert Crittenden Davis*; Ernest V. Edwards; Claude A. Frazier; Joseph Johnson Greer; James Decatur Henderson; Lucius D. Hill; Samuel Hunt; Howard Aiken Ijams; Thomas Ap. Roger Jones; *Robert Bruce Layman*; *Forrest Shetterly LeTellier*; Harry Laurin Lott; Virgil Elwood Massey; Thomas Peacock Miller; Robert Haller Newman; Beecher Lavator Ogle; Reese William Patterson; Cary Alexander Snoddy; James M. Troutt; William H. L. White; Robert Miller Young. MASCOT—Kyle Cornett Copenhaver. VESTAL—Benjamin J. Cogdill.

KNOXVILLE—William P. Atchley; William Henry Landon White.

Lake County

RIDGELY—Willis Socrates Alexander.

Lauderdale County

GATES—Grover Cleveland Conyers; Russell Bate Wilson. GOLD DUST—Russell Brooks Kilpatrick. HALLS—Joseph Charles Blankenship; *Youra Spence Brown.*

Lawrence County

IRON CITY—Clyde Crawford Hardison. SUMMERTOWN—Edward Starter Stewart.

Lincoln County

ELORA—Alfred Luther Griffith. FAYETTEVILLE—William Aaron *Cashion; Charles L. Goodrich; Boone E. Noblitt.*

Loudon County

LENOIR CITY—Gid Malcolm Hall. LOUDON—Halbert Robinson.

Madison County

JACKSON—Benjamin C. Arnold; Dorsey B. Granberry; Thomas Patrick Haralson Jr.; Julius A. Johnson; Fleming James O'Connor; William Gilchrist Saunders.

Marion County

COPENHAGEN—Jere Williams Kirkpatrick. JASPER—Justin Ernest *Lacy.* SOUTH PITTSBURGH—Samuel Newton Anderson; George M. Wampler.

Marshall County

CHAPEL HILL—David De Will Moncrief. LEWISBURG—William Everett Troxler.

Maury County

COLUMBIA—Percy Dake Biddle; Benjamin Franklin Davis; Paul Hamlin Faucett; Lucius Hough Gilmore; Robert Pillow Jr.; *James Porter*; George Cuthbert Williamson. HAMPSHIRE—James Henry Jones. MT. PLEASANT—Grover Cleveland English. WILLIAMSPORT—Henry Osgood Anderson.

McMinn County

ATHENS—James R. Nankivell. ETOWAH—William Daniel Richards.

Meigs County

DECATUR—William Ross Arrants.

Monroe County

TELLICO PLAINS—William Huffman Niles.

Montgomery County

CLARKSVILLE—William Haller Brandau; George Edward Vaughan. WOODLAWN—Manton S. Shelby.

Obion County

RIVERS—Phillip John Trentch. UNION CITY—Marvin A. Blanton; Orville Barnes Chandler; Benjamin F. Loring; Ira Oscar Park.

Perry County

FLATWOODS—William Earl Boyce; Thomas H. Sharp. LOBELVILLE—William Dave Cagle.

Putnam County

COOKEVILLE—William Albert Howard.

Rhea County

SPRING CITY—Joseph M. Clark.

Roane County

CARDIFF—George Edward Wilson. HARRIMAN—Albert Victor Keebler; Fred Adolphus Neergaard. OLIVER SPRINGS—William Asa Shelton.

Robertson County

CEDAR HILL—Miles W. Barnes. GREENBRIER—William Winfred Winters. SPRINGFIELD—Frederick Wilson Lee; Heddy S. Shoulders.

SPRINGFIELD—Heddy S. Shoulders.

Rutherford County

MURFREESBORO—Vernon King Earthman; Aareiel Ellis Goodloe; William Bruce Lunsford; Mathias Brickell Murfree; William Thomas Robison; Asa D. Sharp.

Scott County

ONEIDA—Francis Marion Boyatt.

Sevier County

SEVIERSVILLE—John Harison Huff.

Shelby County

CAPLERVILLE—Robert Griffin Latimer. EADS—Guy Collins Anderson; Green Warren McConathy. LUCY—Wilbur Turner Blackshare; Leslie Turner Bolton. MEMPHIS—Albert Shields Abernathy; Warren Grady Alford; Ernest Lynne Anderson; Conrad O. Bailey; William H. Baldwin; Clyde McKay Beck; Clarence Angelo Bell; Charles Alexander Bender; William Blackwell; Chares Decatur Blassingame; Salvator Leon Boccelato; William Ausborn Brewer; Stanley Needham Brinson; Charles Walter Brown; George L. Brown; Martin Edward Bry; Kinsey Mansfield Buck.

Edward Guy Campbell; William A. Carnes; Grover Carter; James Parvin Carter; *Lyman Harvey Chapman*; William Franklin Clary; William Campbell Colbert; Arthur Fredinand Cooper; Thomas Nelson Coppedge; Thomas Francis Coughlin Jr.; John Wesley Cunningham; John R. Drake; Buford N. Dunavant.

Samuel Lee Edwards; Edward Coleman Ellett; Sidney S. Evans; James Surran Fleming; Samuel Evander Frierson; Edwin Cyril Gillespie; Clarence Hays Grover; James Frank Graham; Roy Granberry.

Emmett Russell Hall; *David Max Hensing*; Jack Phillips Henry; John Hansell Herring; Joel Jones Hobson; James William Hose; Thomas Harkins Ingram; *Mark Mitchell Jetton*; Joseph Edward Johnson; Max Kaplan; Lawrence Larry Keller; Charles Coeffield King; Waldo Briggs Lain; Gilbert Joseph Levy; Joseph Grady Ligon.

William Battle Malone; *Hiram Bradford Mann*; Robin Ferguson Mason; Noah Morgan McFarland; John Lucius McGehee Jr.; Bernard Cornelius McMahon; Alphonse Herman Meyer; Leon Leopold Meyer; John Samuel Miller; *Edward Clay Mitchell*; *J. Logan Morgan*; *Norwin B. Norris.*

James Patrick Owens; *Percy A. Perkins*; John Wilson Ragsdale; Charles Thomas Richardson; Joseph Esthner Robinson; Lisle Benjamin Robinson; Walker Lee Rucks.

Abner Potts Hubert Sage; Benjamin Lucky Schoolfield; Milton Barney Seligstein; Curtis R. Senter; John Joseph Shea; Lawrence Robert Shearin; Gettis Troy Sheffield; *Frank D. Smythe*; Frank Ward Smythe; William Glassell Somerville; Marcus Gustavus Spingarn; James Butt Stanford; Lee Alexander Stone; Charles Kincaid Summers; Walter Thomas Swink; Claude Allen Symons.

John Quill Taylor; James Rodefer Thomas; Edward Gilmer Thompson; Robert B. Underwood; James Albert Vaughan; Frank Cady Venn; Samuel Lewis Wadley; Howard Lombard Walker; Raymond Roscoe Wall; Cecil Everett Warde; Edwin Dial Watkins; William Alexander Watson; Grover Cleveland Webb; Joseph H. White; Benjamin Bernard Wright. NORMAL—Louis Francis Verdel.

MEMPHIS—Hamilton Pope Calmes; Raphael Eustace Semmes.

Sullivan County

BRISTOL—William R. C. Booher; L. W. Newland; William Kirkpatrick Vance Jr. EMMETT—Edgar Charles Hawkins. FORDTOWN—Ernest Blanton Bowery. KINGSPORT—Hugh J. Baker; Milton Maceo Cloud; Charles Pender Edwards.

Sumner County

BETHPAGE—Thomas Edward Wright. GALLATIN—Wm. Nicholas *Lackey; Jonathan Nathaniel Rucker; Homer Reese.* PORTLAND—James Matthew Oliver. WEST MORELAND—William Porter Law.

BETHPAGE—Thomas Edward Wright.

Tipton County

COVINGTON—Lawrence Johnson Lindsey; Walter Wynne Sale. MUNSFORD—John Carlyle Witherington.

Union County

MAYNARDSVILLE—James Stirling Skaggs.

Warren County

IRVING COLLEGE—Polk Duncan Brown.

Washington County

FALL BRANCH—John R. McCrary. NATIONAL [illegible] Emmett Earl Byrd. JOHNSON CITY [illegible] Gaines Moss; Edwin Wiley Reeves. [illegible] Bruce Greenway.

Weakley County

GARDNER—Henry Gideon Edmonson. GLEASON—Ira Jackson Tatum. MARTIN—Richard Mobley Little. SHARON—Alexander Joshua Bryant.

White County

BON AIR—Eustace Cosmo Mason. RAVENSCROFT—Grady Monroe Allison.

Williamson County

ARRINGTON—Joseph Peter Delaney Jr. FRANKLIN—Daniel B. Gliffe; Beverly Toon Nolen.

Wilson County

LEBANON—Nelson A. Bryan; Walter Scott Dotson.

STATE MEDICAL ASSOCIATION OF TEXAS

Officers 1917-18

E. H. Cary, *President*..........Dallas
S. R. Rice, President-Elect..........Martin
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W. P. Coyle..........Orange
F. U. Painter..........Corpus Christi
T. K. Proctor..........Sulphur Springs
Holman Taylor, Secretary..........Ft. Worth
W. L. Allison, Treasurer..........Ft. Worth

Councilor Districts and Officers

First (El Paso) District.—Brewster, El Paso, Jeff Davis, Loving, Pecos, Presidio, Reeves, Terrell, Ward and Winkler counties. Felix P. Miller, Councilor, El Paso.

Second (Big Springs) District.—Andrews, Borden, Cochran, Crane, Dawson, Dickens, Ector, Fisher, Gaines, Garza, Glasscock, Haskell, Howard, Hockley, Jones, Kent, King, Knox, Lynn, Martin, Midland, Mitchell, Nolan, Scurry, Stonewall, Taylor, Terry, Upton and Yoakum counties. J. G. Wright, Councilor, Big Springs.

Third (Panhandle) District.—Armstrong, Bailey, Briscoe, Castro, Carson, Cottle, Childress, Collingsworth, Crosby, Deaf Smith, Dallam, Donley, Floyd, Foard, Gray, Hale, Hall, Hardeman, Hemphill, Hutchinson, Hansford, Hartley, Lamb, Lipscomb, Lubbock, Motley, Moore, Ochiltree, Oldham, Parmer, Potter, Randall, Roberts, Sherman, Swisher, Wheeler, Wichita and Wilbarger counties. C. R. Hartsook, Councilor, Wichita Falls.

Fourth (San Angelo) District.—Brown, Coke, Concho, Crockett, Coleman, Iron, Kimble, Lampasas, Menard, Mills, McCulloch, Reagan, Runnels, Schleicher, Sterling, Sutton and Tom Green counties. J. E. Dildy, Councilor, Lampasas.

Fifth (San Antonio or Western) District.—Atascosa, Bandera, Bexar, Comal, Dimmit, Edwards, Frio, Gillespie, Gonzales, Guadalupe, Karnes, Kendall, Kerr, Kinney, La Salle, Maverick, Medina, Uvalde, Val Verde, Wilson and Zavalla counties. C. S. Venable, Councilor, San Antonio.

Sixth (Corpus Christi or Southwest) District.—Aransas, Bee, Cameron, Duval, Encinal, Hildalgo, Jim Wells, Kleburg, Live Oak, McMullen, Nueces, Refugio, San Patricio, Starr, Webb, Willacy and Zapata counties. W. N. Wardlaw, Councilor, Kingsville.

Seventh (Austin) District.—Bastrop, Blanco, Burnet, Caldwell, Hays, Lee, Llano, Mason, San Saba, Travis and Williamson counties. T. J. Bennett, Councilor, Austin.

Eighth (De Witt) District.—Calhoun, Colorado, De Witt, Fayette, Goliad, Jackson, Lavaca, Matagordo, Victoria and Wharton counties. John W. Burns, Councilor, Cuero.

Ninth (Southern Texas) District.—Austin, Brazoria, Brazos, Burleson, Chambers, Ft. Bend, Galveston, Grimes, Harris, Madison, Montgomery, Walker, Waller and Washington counties. J. H. Foster, Councilor, Houston.

Tenth (Southeastern) District.—Chambers, Hardin, Jasper, Jefferson, Liberty, Nacogdoches, Newton, Orange, Polk, Sabine, San Augustine, San Jacinto, Shelby and Tyler counties. M. F. Bledsoe, Councilor, Porth Arthur.

Eleventh (Eastern) District.—Anderson, Angelina, Cherokee, Freestone, Henderson, Houston, Leon, Panola, Rusk, Smith and Trinity counties. C. C. Nash, Councilor, Palestine.

Twelfth (Central) District.—Bell, Bosque, Comanche, Coryell, Erath, Falls, Hamilton, Hill, Hood, Johnson; Limestone, McLennan; Milam, Navarro, Robertson and Somervell counties. Arthur C. Scott, Councilor, Temple.

Thirteenth (Northwestern) District.—Archer, Baylor, Callahan, Clay, Eastland, Jack, Palo Pinto, Parker, Shackelford, Stephens, Throckmorton and Young counties. C. B. Williams, Councilor, Mineral Wells.

Fourteenth (Northern) District.—Collin, Cooke, Dallas, Delta, Denton, Ellis, Fannin, Grayson, Hopkins, Hunt, Kaufman, Lamar, Montague, Rains, Rockwell, Tarrant, Van Zandt and Wise counties. A. W. Carnes, Councilor, Dallas.

Fifteenth (Northwestern) District.—Bowie, Camp, Cass, Franklin, Gregg, Harrison, Marion, Morris, Red River, Titus, Upshur and Wood counties. C. E Scale, Councilor, Daingerfield.

TEXAS

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Anderson	938	22.3	30,814	734	42	..	15	31	23	6
Andrews	1,565	782,5	1,624	812	2	..	1	2	1	..
Angelina	940	31.3	20,789	692	30	..	11	20	20	2
Aransas	240	120.0	2,390	1,195	2	..	1	1	1	..
Archer	872	174.5	9,458	1,891	5	..	3	4	2	1
Armstrong	903	180.6	3,759	751	5	..	2	2	2	1
Atascosa	1,358	113.2	12,092	1,007	12	..	8	11	5	2
Austin	728	40.4	17,690	983	18	..	12	17	15	..
Bailey	1,030	1030 0	537	537	1	..	..	..	1	..
Bandora	983	245.7	4,507	1,126	4	..	1	2	2	..
Bastrop	867	37.7	23,344	1,014	23	..	11	14	18	1
Baylor	880	110.0	12,322	1,540	8	..	11	5	7	..
Bee	856	57.1	15,280	1,018	15	..	4	12	14	1
Bell	1,083	12.3	51,851	589	88	2	44	64	60	13
[1]Bexar	1,263	5.0	156,360	615	254	7	140	189	176	51
Blanco	750	125.0	4,311	718	6	..	2	4	5	1
[2]Borden	895	.....	1,832	.....	..	..	..	..	..	..
Bosque	975	31.4	20,197	651	31	..	9	21	18	5
Bowie	873	17.5	40,776	815	50	1	21	44	28	2
Brazoria	1,340	55.8	13,299	554	24	1	7	17	13	3
Brazos	597	24.9	18,963	790	24	1	10	17	10	3
Brewster	5,935	539.5	7,311	664	11	..	8	8	6	3
Briscoe	903	301.0	2,826	942	3	..	..	2	..	..
[2]Brooks	.....	.....	4,590	1,526	3	..	2	2	1	..
Brown	936	19.5	27,982	573	49	..	17	37	33	5
Burleson	681	40.1	18,920	1,112	17	..	4	10	7	2
Burnet	974	60.9	10,922	682	16	..	8	11	5	2
Caldwell	511	21.3	26,040	1,085	24	..	9	20	20	5
Calhoun	563	70.4	4,539	567	8	..	5	5	3	..
Callahan	854	50.2	16,044	943	17	..	5	9	3	..
Cameron	2,434	83.9	32,767	1,129	29	..	21	27	15	6
Camp	207	14.2	9,848	703	14	..	6	10	7	..
Carson	893	111.6	3,338	417	8	..	4	6	5	1
Cass	951	31.7	31,051	1,035	30	1	16	24	19	3
Castro	896	896.0	2,910	2,910	1	..	1	1	1	..
Chambers	618	88.3	5,101	728	7	..	2	3	4	..
Cherokee	1,049	26.2	31,873	796	40	1	22	31	28	3
Childress	733	38.6	14,939	786	19	..	11	14	12	4
Clay	1,158	50.3	22,746	988	23	..	11	14	14	2
Coke	931	116.4	8,587	1,073	8	..	5	6	2	..
Coleman	1,290	43.0	31,774	1,059	30	..	9	20	14	5
Collin	878	9.6	49,021	538	91	1	34	52	45	7
Collingsworth	898	81.6	8,137	748	11	..	6	6	9	1
Colorado	972	57.2	18,897	1,111	17	..	9	13	16	4
Comal	559	69.9	9,474	1,184	8	..	5	6	8	1
Comanche	948	36.5	30,236	1,162	26	..	6	12	16	2
Concho	918	229.5	10,468	2,617	4	..	4	2	3	1
Cooke	902	19.2	26,603	566	47	2	19	16	27	11
Coryell	1,085	31.9	21,992	646	34	..	20	16	23	1
Cottle	1,012	144.6	6,874	982	7	..	5	6	6	..
[2]Crane	878	.....	531	.....	..	..	..	..	..	..
Crockett	3,215	1607.5	1,296	648	2	..	2	2	2	..

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1. Includes San Antonio, population 128,215; physicians 251 [M.R.C. 50].
2. County recently organized; area included with that of other counties.

TEXAS—Continued

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Crosby	870	96.7	2,479	275	9	..	2	7	2	1
[2]Culberson	.....	.....	2,172	1,086	2	..	1	1	1	..
Dallam	1,532	80.6	6,811	358	19	1	3	7	4	3
[3]Dallas	859	2.3	174,451	479	364	11	209	286	181	61
Dawson	903	150.5	3,986	664	6	..	5	5	4	1
Deaf Smith	1,549	309.8	6,201	1,240	5	..	1	4	..	..
Delta	261	9.7	14,566	539	27	..	14	21	18	4
Denton	952	15.1	33,401	530	63	..	17	15	36	1
Dewitt	879	20.4	25,100	583	43	..	18	32	32	5
Dickens	881	110.1	4,509	563	8	..	3	8	3	..
Dimmit	1,360	272.0	5,177	1,035	5	..	2	3	4	1
Donley	906	82.4	7,130	648	11	..	6	7	9	..
Duval	1,825	456.2	9,100	2,275	4	..	3	3	2	..
Eastland	925	21.5	27,400	637	43	..	12	22	17	6
Ector	892	892.0	1,761	1,761	1	..	1	1	1	1
Edwards	2,352	1176.0	2,764	1,382	2	..	..	1	3	..
Ellis	975	13.7	52,235	555	91	..	46	70	62	11
[4]El Paso	9,331	68.6	80,601	597	136	..	80	119	87	25
Erath	1,083	36.1	33,619	1,121	30	..	16	23	18	6
Falls	745	16.5	37,333	829	45	..	17	30	25	13
Fannin	838	11.6	44,801	622	72	..	21	50	46	9
Fayette	968	37.2	29,796	1,146	26	..	10	17	11	1
Fisher	885	52.0	19,085	1,122	17	..	4	12	12	4
Floyd	1,011	77.7	6,549	503	13	..	6	9	4	1
Foard	612	76.5	8,762	1,095	8	..	3	6	4	1
Fort Bend	792	41.7	19,358	1,018	19	..	10	13	11	4
Franklin	289	41.3	9,810	1,401	7	..	3	3	6	..
Freestone	882	40.1	21,760	989	22	..	12	17	16	3
Frio	1,124	112.4	12,321	1,232	10	2	6	7	7	2
Gaines	1,540	513.3	2,131	710	3	..	1	2	1	..
[5]Galveston	395	3.9	44,751	438	102	6	57	7	62	27
Garza	870	217.5	3,315	828	4	1	3	4	3	1
Gillespie	1,109	100.8	10,326	939	11	..	7	7	4	2
Glasscock	866	866.0	1,769	1,769	1	..	..	..	..	..
Goliad	799	61.5	11,079	852	13	..	4	3	7	1
Gonzales	1,020	33.0	28,055	825	31	1	16	19	21	8
Gray	899	128.4	5,540	791	7	..	3	5	4	1
Grayson	942	8.5	67,699	609	111	..	67	83	70	18
Gregg	312	13.0	15,452	643	24	..	12	14	10	3
Grimes	812	30.1	21,205	785	27	..	9	18	15	2
Guadalupe	703	54.1	27,487	2,114	13	..	8	10	11	3
Hale	1,036	49.3	11,863	564	21	..	7	14	14	..
Hall	901	56.3	13,102	818	16	..	8	12	12	4
Hamilton	833	37.9	16,626	755	22	..	9	15	13	4
Hansford	882	294.0	1,496	478	3	..	2	3	1	..
Hardeman	761	38.0	16,745	837	20	1	7	10	15	3
Hardin	862	43.1	18,713	935	20	..	13	14	9	2
[6]Harris	1,654	6.1	153,582	570	269	8	130	203	162	52
Harrison	872	19.4	41,158	914	45	1	24	32	24	4
Hartley	1,507	1507.0	1,969	1,969	1	..	..	..	..	..
Haskell	923	43.9	26,184	1,246	21	..	12	14	10	2
Hays	623	28.3	16,521	750	22	..	10	18	13	1
Hemphill	873	124.7	4,888	698	7	..	5	4	5	..
Henderson	946	37.8	20,247	809	25	..	11	20	18	..
Hidalgo	2,276	87.5	17,565	752	26	..	15	17	15	3
Hill	966	11.9	50,704	625	81	..	37	58	55	8
Hood	405	28.9	10,636	759	14	1	4	5	10	1
Hopkins	813	17.3	33,292	708	47	..	17	28	32	3
Houston	1,231	31.6	32,565	835	39	..	13	21	21	2
Howard	891	81.0	13,517	1,228	11	..	4	10	11	1
[2]Hudspeth	.....	.....	1,152	576	2	..	2	2	1	..
Hunt	893	10.9	48,715	594	82	..	28	52	49	10
Hutchinson	879	.....	1,321	.....	..	..	1	..	..	..
Irion	998	998.0	1,601	1,601	1	..	..	1	1	..
Jack	962	56.6	12,979	763	17	..	8	11	11	1
Jackson	893	111.6	6,746	843	8	..	3	5	4	2
Jasper	978	51.5	19,746	1,039	19	..	8	12	13	1
Jeff Davis	2,263	754.3	2,063	687	3	..	2	1	1	..
Jefferson	920	10.9	55,659	662	84	..	45	81	55	7
[2]Jim Hogg	.....	.....	5,745	2,872	2	..	..	2	..	..
[2]Jim Wells	.....	.....	10,436	1,304	8	..	4	5	6	3
Johnson	740	14.0	34,929	659	53	1	23	31	37	5
Jones	922	27.9	36,888	1,117	33	..	12	28	25	4
Karnes	692	38.4	19,513	1,084	18	..	9	13	16	3
Kaufman	834	12.4	36,741	548	67	..	28	47	49	8
Kendall	598	149.5	4,820	1,205	4	..	2	2	3	1
Kent	875	175.0	3,937	687	5	..	4	3	..	..
Kerr	1,197	108.8	5,413	492	11	..	6	8	8	..
Kimble	1,301	216.8	3,815	635	6	..	2	2	5	..
[2]King	867	.....	1,043	.....	..	..	..	..	..	..
Kinney	1,312	1312.0	4,097	4,097	1	..	2	1	..	..
[2]Kleberg	.....	.....	4,319	431	10	..	5	6	7	3
Knox	862	50.7	14,956	879	17	..	10	11	11	..
Lamar	915	11.8	46,544	581	80	..	30	52	45	6
Lamb	1,022	1022.0	912	912	1	..	..	..	1	..
Lampasas	740	43.5	10,194	499	17	..	6	10	11	1
Lasalle	1,567	522.3	6,530	2,176	3	..	3	3	3	..
Lavaca	950	73.1	26,418	2,032	13	..	7	11	11	2
Lee	562	40.1	13,132	938	14	..	2	2	6	2
Leon	1,101	50.0	16,583	753	22	..	14	16	19	2
Liberty	1,160	82.8	12,573	898	14	1	7	12	6	..
Limestone	974	31.4	36,175	1,166	31	..	11	20	23	4
Lipscomb	888	296.0	3,980	1,326	3	..	3	3	2	1
Live Oak	1,116	279.0	4,300	1,075	4	..	1	3	2	1
Llano	971	80.9	6,520	543	12	..	4	5	7	..
Loving	753	.....	407	.....	..	..	..	..	..	..
Lubock	868	62.0	6,051	432	14	1	8	8	10	1
Lynn	864	108.0	2,951	368	8	..	5	8	2	2
McCulloch	1,073	67.1	20,298	1,268	16	..	11	15	10	1
[7]McLennan	1,049	6.2	83,089	491	169	2	83	121	109	31

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3. Includes Dallas, population 129,632; physicians 316 [M.R.C. 61].
4. Includes El Paso, population 69,149; physicians 127 [M.R.C. 25].
5. Includes Galveston, population 42,650; physicians 92 [M.R.C. 27].
6. Includes Houston, population 116,878; physicians 236 [M.R.C. 48].
7. Includes Waco, population 34,015; physicians 103 [M.R.C. 20].

TEXAS—continued

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
McMullen	1,302	1302.0	1,140	1,140	1	..	..	1	..	..
Madison	495	14.2	10,318	859	12	..	7	10	8	1
Marion	391	39.1	10,472	1,047	10	..	1	2	7	..
Martin	904	452.0	2,437	1,218	2	..	1	1	1	..
Mason	969	121.1	5,763	720	8	..	3	4	2	..
Matagorda	1,136	56.8	19,066	953	20	1	6	16	14	4
Maverick	1,251	208.5	5,944	990	6	..	8	4	3	..
Medina	1,353	104.1	17,526	1,348	13	..	6	12	8	2
Menard	914	228.5	3,214	803	4	..	4	..	..	2
Midland	887	147.8	4,721	775	6	..	3	4	3	1
Milan	959	22.3	36,780	855	43	..	23	32	31	8
Mills	696	69.6	11,039	1,103	10	..	2	4	4	..
Mitchell	885	110.6	13,411	1,676	8	..	3	6	8	1
Montague	929	29.0	25,360	792	32	..	10	18	15	1
Montgomery	1,017	67.8	15,679	1,045	15	..	11	11	8	1
Moore	921	460.5	817	408	2	..	..	..	1	..
Morris	259	17.3	12,060	804	15	..	8	11	12	..
Motley	1,030	257.5	3,226	806	4	..	3	4	1	1
Nacogdoches	1,059	31.1	29,409	864	34	..	14	21	22	2
Navarro	1,060	15.6	49,767	731	68	..	27	54	40	8
Neuces	2,275	65.0	15,606	445	35	..	19	29	28	7
Newton	885	63.2	13,453	960	14	..	5	12	5	1
Nolan	880	44.0	18,851	942	20	1	12	16	13	6
Ochiltree	891	445.5	2,576	1,288	2	..	..	..	..	..
Oldham	1,543	308.6	1,151	230	5	..	2	4	..	..
Orange	363	20.2	12,172	676	18	..	6	14	15	..
Palo Pinto	958	24.6	24,773	633	39	..	9	23	18	1
Panola	842	35.1	20,424	888	24	..	11	12	7	1
Parker	875	22.5	26,702	785	34	..	8	20	13	4
Parmer	902	451.0	2,666	1,333	2	..	1	2	2	1
Pecos	4,134	133.5	2,564	641	4	..	2	1	2	1
Polk	1,217	55.3	19,659	893	22	..	14	17	14	1
Potter	934	33.3	20,165	720	28	..	12	21	23	7
Presidio	3,812	544.6	6,345	906	7	..	5	7	4	2
Rains	267	53.4	7,268	1,453	5	..	5	4	1	..
Randall	937	244.2	5,026	1,256	4	..	1	2	2	1
Reagan	1,071	1071.0	1,572	1,572	1	..	1	1	..	1
[2]Real	.....	.....	2,077	692	3	..	2	3	..	..
Red River	1,039	22.1	28,564	607	47	..	24	36	7	1
Reeves	2,781	695.2	6,250	1,562	4	..	6	4	3	..
Refugio	740	123.3	3,670	611	6	..	6	5	5	3
Roberts	882	220.5	1,189	297	4	..	1	2	2	..
Robertson	872	29.1	27,454	915	30	..	10	18	16	2
Rockwall	149	9.3	8,072	504	16	..	4	9	9	..
Runnels	1,083	45.1	32,155	1,339	24	..	15	18	15	1
Rusk	983	27.3	27,564	737	36	..	10	20	20	3
Sabine	589	36.7	10,177	636	16	..	7	8	10	..
San Augustine	622	23.9	13,329	512	26	..	6	26	2	1
San Jacinto	602	100.3	9,542	1,590	6	..	2	4	3	..
San Patricio	676	48.3	10,909	778	14	..	7	10	9	2
San Saba	1,116	65.6	13,927	819	17	..	10	10	6	..
Schleicher	1,387	693.5	2,898	2,449	2	..	1	..	..	..
Scurry	887	49.3	15,862	881	18	..	8	12	11	5
Shackleford	947	157.8	5,470	911	6	..	2	2	..	..
Shelby	833	23.1	30,761	855	36	..	16	27	18	4
Sherman	935	935.0	2,304	2,304	1	..	..	..	..	..
Smith	920	16.7	44,939	817	55	..	20	35	31	3
Somervell	184	30.7	4,246	707	6	..	2	1	1	..
Starr	2,675	668.7	7,603	1,900	4	1	3	3	2	..
Stephens	925	132.1	9,084	1,297	7	..	1	4	4	..
Sterling	948	316.0	1,760	586	3	..	1	2	1	..
Stonewall	852	170.4	7,608	1,521	5	..	5	5	2	2
Sutton	1,521	304.2	1,569	313	5	..	1	2	..	..
Swisher	898	147.3	6,015	1,007	6	..	4	4	2	..
[8]Tarrant	903	3.6	149,593	595	251	1	109	123	176	34
Taylor	908	23.3	37,820	969	39	..	22	30	29	2
Terrell	2,635	1317.5	1,770	885	2	1	1	1	1	1
Terry	870	435.0	2,513	1,256	2	..	..	..	..	..
Throckmorton	879	175.8	6,616	1,323	5	..	2	3	3	..
Titus	398	15.9	19,435	777	25	1	7	18	19	..
Tom Green	1,454	33.8	26,073	606	43	1	16	30	27	6
[9]Travis	1,004	9.6	61,631	592	104	4	57	71	74	15
Trinity	716	31.1	14,074	611	23	..	12	16	15	3
Tyler	908	90.8	10,250	1,025	10	..	4	7	..	..
Upshur	600	23.1	22,656	640	26	..	12	11	14	..
Upton	1,195	1195.0	831	831	1	..	1	1	..	..
Uvalde	1,589	105.9	16,041	1,065	15	..	4	10	9	1
Valverde	3,083	385.4	11,057	1,382	8	..	3	8	6	3
Van Zandt	831	25.9	25,774	805	32	..	11	22	18	3
Victoria	890	46.8	15,947	839	19	..	6	13	15	4
Walker	791	65.9	16,241	1,353	12	..	4	10	9	1
Waller	519	51.9	12,138	1,213	10	..	3	4	5	..
Ward	827	206.7	3,074	768	4	..	2	3	3	1
Washington	628	24.1	25,561	983	26	..	15	21	7	4
Webb	3,219	123.4	22,979	883	26	1	16	19	15	4
Wharton	1,112	52.9	24,173	1,151	21	..	10	16	13	2
Wheeler	895	99.4	8,632	959	9	1	5	8	6	2
Wichita	604	14.0	23,603	548	43	..	24	37	35	7
Wilbarger	928	46.4	16,556	827	20	1	13	13	12	..
[2]Willacy	.....	.....	2,468	2,468	1	..	1	1	1	1
Williamson	1,129	17.4	45,261	741	65	..	34	39	47	13
Wilson	813	54.2	19,331	1,288	15	1	4	8	4	1
Winkler	844	844.0	719	719	1	..	..	..	..	..
Wise	863	23.3	26,450	714	37	1	20	33	29	2
Wood	657	13.1	25,146	502	50	..	24	33	24	1
Yoakum	879	439.5	1,020	510	2	..	..	1	..	..
Young	875	58.3	18,851	1,256	15	..	9	10	10	3
Zapata	1,288	.....	2,972	.....	..	..	..	..	..	..
Zavalla	1,348	449.3	2,689	896	3	..	2	3	..	..
Totals	259,862	41.6	4,557,957	730	6,236	74	2,871	4,039	3,731	788

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8. Includes Fort Worth, population 100,597; physicians 207 [M.R.C. 31].
9. Includes Austin, population 35,612; physicians 94 [M.R.C. 12].

HONOR ROLL

Anderson County

ELKHART—Joseph Harkess Hicks. MONTALBA—Ellery McRae Outlaw. PALESTINE—Louis Hampton Cockerham; Elliott V. Converse; Robert Henderson McLeod; George Washington Wilhite.

Angelina County

LUFKIN—Benjamin Franklin Gibson; Jesse W. Hawkins.

Archer County

ARCHER CITY—John Marion Hooper.

Armstrong County

CLAUDE—William Arthur Warner.

Atascosa County

PLEASANTON—Roger Atkinson; George Newton Ricks.

Bastrop County

CEDAR CREEK—William Edgar Campbell.

Bee County

[illegible] Harrison Bowman; Orville E. Egbert; Jesse Harpe [illegible] Neeley; Robert Marion Prather. MINERAL—John William McMahon.

Bell County

KILLEEN—John W. Ellis; Roy G. Giles. TEMPLE—Henry Carroll Bailiff; Richard Carleton Curtis; Edmund Choille Hancock; Jesse Gee Jenkins; Robert Lee Kimmins; Victor M. Longmire; William Earl McKinney; Kincy Julius Scott; Saunders James Thompson; Edward Frank Yeager. TROY—James L. Crawford.

Bexar County

SAN ANTONIO—Scott Carter Applewhite; William M. Bassett; William Feuilleteau Bonner; Paul Newkirk Bowman; Joseph C. Breitling; Alexander Aaron Brown; Karl Trueblood Brown; Dewitt Clinton Burkes; Edward J. Burnett; Howard Marion Bush; Charles Craig Cade; Archibald Fletcher Clark; Frederick John Combe; John Niven Darrough; Robert Lee Dinwiddie; Malone Duggan.

Douglas Saunders Edwards; William Robert Fickessen; John Francis Gibson; John William Goode; Frank Nicholas; Haggard; William Huard Hargis; William Thomas Harris; Walter Christian Hirzel; Thomas Terrell Jackson; Isidore Stanley Kahn; Casimir Boleslaus Kitowski.

Llewellyn East McAdon; Alfred Clifton McDaniel; Joseph Edwin McDonald; William Francis McManus; Zack Jackson Moore; George Adolph Mueller; William Edward Nesbit; Henry Houston Ogilvie; Frank Paschal; Witten Booth Russ.

Lieuon Moss Rogers; Bradford R. A. Scott; Charles Elain Scull; Thad Shaw; Bernard Fletcher Smith; Cole Fro Smith; Ernest Jackson Steves; Oliver H. Timmins; Charles Scott Venable; John Manning Venable; Homer T. Wilson; Henry Otto Wyneken; Charles Philip Yeager. VON ORRMY—Henry Brooks.

Blanco County

William Marshall Barron.

Bosque County

CLIFTON—Jacob C. Carpenter. MERIDIAN—Gordon Grimland; John Frank McDonald; Fred W. Standefer. WALNUT SPRINGS—James Andrew Murray.

Bowie County

TEXARKANA—William Kimball Read; Harry Herr Smiley.

Brazoria County

ALVIN—Albert Johnson Pollard; Foster Reed Winn. ANGLETON—Jefferson Davis Motheral.

Brazos County

BRYAN—William Arthur Hammond; Albert Ludwin Mondricks; Bartlett U. Sims.

Brewster County

ALPINE—J. Frank Clark. MARATHON—Frank E. Thompson. TERLINGUA—Richard A. Wilson.

Brown County

BROWNWOOD—William Leo Hester; Isaac Dudley Jackson; Wendell Arthur H. Paige. MAY—Paul DeWitt Robason. WINCHELL—Harry Loy Locker.

Burleson County

CALDWELL—Thomas Luther Goodnight; William Joseph McLean.

Burnett County

BERTRAM—Jesse Lee Hall. BURNETT—Charles Hansford Brownlee.

Caldwell County

LOCKHART—Lon Lemuel Hewlett; Edwin Grover Schwarz. LULING—Sidney Joseph Francis. MARTINDALE—George Walden Douglas. MAXWELL—Cranz Nichols.

Cameron County

BROWNSVILLE—Casper R. Byars; Ezra E. Dickason; Harry K. Loew; James Asa Simpson. HARLINGEN—George Albert McBride. SAN BENITO—William Jonathan Vinsant.

Carson County

GROONE—William Judson Kesterson.

Cass County

ATLANTA—Jesse Harmon Herndon. BRYANS MILL—William C. Kidwell. MARIETTA—James Walter Shaddix.

Cherokee County

FROST—Howard Banks Orr. JACKSONVILLE—Edward Baxter Jones. RUSK—William P. Barron.

Childress County

CHILDRESS—Cleve Carrington Odom; John William Snyder; Robert Bonner Wolford. TELL—Grover Cleveland Fox.

Clay County

BYERS—Frank Dennis Shepard. HENRIETTA—Thaddeus Kosciusko Jones.

Coleman County

COLEMAN—Robert Bailey; Robert Henry Cochran; Edgar Vernon Henry. SANTA ANNA—Marshall Albert Ramsdell; Thomas Richard Sealy.

Collin County

CELINA—Doe Milner Speer. FARMERSVILLE—William Carter Wright. FRISCO—Eugene Alphonse Frechet; Douglas Shearer Duncan. McKINNEY—Howard Crosby Curtis; Benjamin Franklin Largent; Arthur Q. Shirley.

Collingsworth County

WELLINGTON—Elmer W. Jones.

Colorado County

COLUMBUS—Willis George Youens. EAGLE LAKE—Thomas P. Doole. OAKLAND—Ross Edwin Pridgen. WEIMAR—Otto James Folthast.

Comal County

NEW BRAUNFELS—Rennie Wright.

Comanche County

GUSTINE—Eli Edwin Brown. SIDNEY—Perry Grant Hays.

Concho County

EDEN—Jesse Polk Lockhart.

Cooke County

BRONTE—William Frank Chambers. GAINESVILLE—Edgar L. Gilcreest; Roy Eugene Hughes; John Riley Lewis; Oregon Frank Strong; Charles Herbert Warren. MYRA—Aaron L. Roberts. ROSSTON—William Morgan Walter Johnson. VALLEY VIEW—Ozro White Cunningham; Jesse Louis Dawson. WOODBINE—Michael Monroe Bisinger.

Coryell County

JONESBORO—James Harvey Hamilton.

Crosby County

RALLS—Frank Harrison.

Dallam County

DALHART—Charles H Tillotson. TEXLINE—C. Zeno Holt.
DALHART—Robert Lee Owens.

Dallas County

CANTON—Horace Hampton Hilliard. DALLAS—Roy Lee Alguier; John Thomas Bernard; Edgar Rufus Boren; Thomas C. Brewer; Elmore G. Brittain; Byron S. Bruce; George Lawson Carlisle; Marcus Miller Carr; William Beall Carrell; Manton Marble Carrick; Richard King Cole; James Thomas Colwick; Dolphus Edward Compere; Van Cookerly; Jackson Stewart Cooper; Robert Walter Cowart; John H. Dorman; Miles Jordan Duncan; John Henry Erwin; Lewis William Fetzer; Knight William Field; John Folkner Ford; Emory V. Fulton; James Hal Gambrell; Richard Theodore Hamilton; Benjamin Everette Howell; William E. Hubbert; Melvin Lafayette Hutcheson.

Harry B. Jablow; Reuben Wright Jackson; Walter Lee Jackson; Harry William Leggett; Edgar Webb Loomis; Mark Eugene Lott; Royal Shepard Loving; Ezra Hinman Mathewson; Robert Bartholow McBride; Joseph M. McCall; John Cano McLaurin; Lafayette Miller; Charles La Fayette Morgan; Walter H. Moursand.

Philip Henry Nevitt; Ernest William Nitsche; Eugene Mack Parrish; Gustavus Schaub; Hall Shannon; William White Shortal; DeWitt Smith; Henry Templeton Smith; Hester Brewer Smith; Wreno Edgar Smith; Sneed Strong; Roland T. Travis; Robert Augustus Trumbull; Raleigh Sims Usry; John Clyde Wade; Thomas Spaulding Williams; George Herman Wymann. EAGLE FORD—Thomas Barnett Sappington. GARLAND—Clarence Sydney Brown. LANCASTER—Charlie Campbell Parks. MESQUITE—Emmett B Bruton.
DALLAS—Hester Brewer Smith.

Dawson County

LAMESA—William Henry Bennett.

Delta County

BEN FRANKLIN—Thomas Richardson Morehead. COOPER—Thomas Martin Darwin; Erastus Baxter Wheat.

Denton County

DENTON—Ernest Winfred Breihan.

De Witt County

CUERO—John Metcalf Trible. WESTHOFF—Sterling Price Boothe. YOAKUM—Russell L. Harper; Robert M. Milner. YORKTOWN—Leon Wonceslau Nowierski.

Dimmit County

CARRIZO SPRING—Edward Jackson Burns.

Eastland County

CISCO—George Wayne Griswold EASTLAND—Shelby Poe Roaten; Harris Diaz Whittington GORMAN—Edward Charles Blackwell; Elmore Bruce Gilbert. RANGER—Caleb O. Terrell.

Ector County

ODESSA—Rufus Garland Wilson.

Ellis County

BOYCE—Joseph Edward J [illegible] —Frederick Lee Story. [illegible] vis Nifong. ENNIS [illegible] MILFORD—Hugh Earl Ro [illegible] laiborne Browne. Edward Munchus. WAXAHACHIE—Herbert *Donnell* [illegible] Donnell; James Sweatt; Wm. Collins Tenery; Clute Edward Rayburn.

El Paso County

EL PASO—Charles Paul Austin; Frank Oliver Barrett; Arthur Howard Butler; Eugene R. Carpenter; Erwin Jeptha Cummins; Herbert Othello Darnall; Hugh M. Helm; Charles McChristie Hendricks; *William Ross* Jamieson.

David Henry Laurence; Thomas Clark Liddell; William Henry Lloyd; Kevin David Lynch; Claude H. Mason; Thomas J. McCamant; William McKinney; John Thompson McLean; Irving McNeil; Nathaniel Taylor Moore; Phau Rivers Outlaw; Scuray Latimer Terrell; Edgar Emell Ward; Miley Barton Wesson Jr. FORT BLISS—Penrose Herr Shelley. SIERRA BLANCA—Bonaparte Preston Norvell.

Erath County

DUBLIN—Herbert Nawlin Barnett; Thomas Ford Bryan. HUCKABAY—William Bainbridge Foster. STEPHENVILLE—Mark Leonidas Stricklin. THURBER—Elmer Abraham Rowley; James Allen Shackelford.

Falls County

DURANGO—Franklin B. King. LOTT—Farley C. Parrott. MARLIN—Walter Alvin Black; Saunders Leon Chandler; Andrew Leroy Hunter; Edgar Powell Hutchings; William K. Logsdon; Frank Hawthorn Shaw. OTTO—Isaac Arnett Dix. ROSEBUD—Robert F. Aycock; William Amos Chernosky; Benjamin Oliver White. TRAVIS—Daniel Heard Brook.

Fannin County

BONHAM—Ralph C. Davis; Elden H. H. Foster. HONEY GROVE—Omer Oral Gain, Albert Harry McRuffin; John Howard Nesbitt. LADONIA—Gordon Burnett McFarland. LAMASCO—John James Gill; Orren Packenham Goodwin SAVOY—Charles Sherman Carter.

Fayette County

WESTPOINT—Lyle Gunn Thornton.

Fisher County

ROBY Robert Russell Allen; Daniel Herbert Reeves; Mouldon Smith. SYLVESTER- Robert Irwin Grimes.

Floyd County

LOCKNEY—Don Paul Jones.

Foard County

CROWELL Hines Clark.

Freestone County

DEW David Leslie Lowry. TEAGUE—William Proyor Harrison. WORTHAM Thomas P. McLendon.

Frio County

DILLEY—Ellis F. Gates PEARSALL—John William Brown.

Ft. Bend County

RICHMOND Levy Steven Johnson; Arthur Elbert Jones; John Mark O'Farrell. ROSENBERG—Arthur George Neighbor.

Galveston County

FRIENDSWOOD—Wilmer Amos Hadley. GALVESTON—Munsell Lee Adair; William H. Cade Jr; Jared E. Clarke, Scott Stuart Fay; William Comstock Fisher Jr; J Flautt; James Graham Flynn; Allen George Heard; Wade L. Hoecker; Joseph Schoolfield Jones.

Edwin Bailey Kenner, Oscar T. Kirksey; Moise Dreyfus Levy; Percy Edgar Luecke, Tarleton Flemming Moore; Daniel Hall Raney; William Boyd Reading, Henry Reid Robinson

Benjamin Franklin Smith Jr.; William Fielding Spiller; Jamie D. Stephens, James Edwin Thompson; Benjamin O. Thrasher; William Charles Wedemeyer TEXAS CITY—Seaton Norman.
GALVESTON—Miles Edgar Hastings.

Garza County

POST—David Cash Williams.

Gillespie County

FREDERICKSBURG—Edwin Roy Townsend; Wesley John Charles Wiemers.

Goliad County

GERMANTOWN—Talmage Oliver Wooley.

Gonzales County

BELMONT—Joseph C. Smith. GONZALES—William Thomas Dawe; Theodore Dorsett; William Townsend Dunning; Gideon Graham; Theodore Hudson Harrell; Louis Julius Stahl. SMILEY—Robert Wynne Horton.

Gray County

PAMPA—Walter Purviance.

Grayson County

BELLS—Frank Price Miller. DENISON—Joseph G. Ellis Jr; William Arthur Lee, Alfred Kahn; Charles McGregor; Murphy M. Morrison; John Frank Stein. SHERMAN—Hubert Lee Brown; Wilbur Carter; Edmond D. Neer; Henry Crozier Ricks; Davis [illegible] dolph Venable; Sidney Carrington Venable. [illegible] Alfred Lewis Wolfe WHITESBORO—George [illegible] Henry Coleman. WHITE WRIGHT—John B. Bauguss.

Gregg County

KILGORE—Elizah Arthur Calloway; Ernest Hubbard Hamilton. LONGVIEW—Charles Cleveland Adams.

Grimes County

PLANTERSVILLE—Charles Malone McMillan. SHIRO—Charles Davis

Guadalupe County

KINGSBURY—Hershall Loforge. SEGIN—Arthur William C. Bergfeld Jr.

Hall County

ESTELLINE—Vester Varden Clark. LAKEVIEW—George Lucene Langworthy. MEMPHIS—James Morgan Ballew. NEWLIN—Russell Earle Tyler.

Hamilton County

HAMILTON—Charles Culberson Cleveland. HICO—James Daniel Currie. POTTSVILLE—Melvin Oscar Rea. SHRIVE—Charles Edgar Chandler.

Hardeman County

BIBLES—Carl K. Arnold. QUANAH—Charles Brooks Jones; Robert Ray McDoniel.

Hardin County

HONEY ISLAND—James Arnold Bledsoe. SOUR LAKE—Tilghman Opta Darby.

Harris County

CEDAR BAYOU—John Gaillard Schilling. GOOSE CREEK—William Louis Culpepper. HOCKLEY—Roy Leighton Akehurst. HOUSTON—Euga M. Arnold; Charles M. Aves; Charles W. Aydam; Ernest William Bertner; Claude C. Cody Jr.; Edward Fenton Cooke; Earl Mitchell Culter; Peyton R. Denman; Richard M. Fancher; H. C. Feagin; Arthur Flickwer.

Jesse Franklin Gamble; James Philip Gibbs; Frank Scott Glover; Everett Logan Goar; Virgil David Greer; Lucius Lamar Handly; Franklin Brevard King; Lane Bruce Kline; Lyle J. Logue; Frederick Rice Lummis; William C. Lyon.

Bathune McDonald; James Ward McKee Jr.; Herbert Lee McNeil; William Page Meredith; Jeffrey Charles Michael; *George S. Milnes*; Solon Milton; James M. Mitchner; Carroll Lucas Moore; Harry Kell Morrison; Michael Victor Moth; Arthur Josephus Mynatt; James Howard Park Jr.

Charles F. Payne; Ira Elbert Pritchett; W. Wallace Ralston; *Wallace Nelson Shaw*; Clifford Talbot Smith; Albert Edwin White; Warren Muldrow Wier; William Orin Williams; Roy DeLisle Wilson; Carl Buchanan Young Jr. HUMBLE—Whitmel Harley Jones. SEABROOK—Delano Richard Ayes.

HOUSTON—F. G. Parkhill; Wm. E. Ramsay; Emory West Reeves.

Harrison County

MARSHALL—John B. Baldwin; James Rucker Dickson; St. Julien R. Murchison; Elisha Houston Roberts.

Haskell County

HASKELL—Silas Green Cain. WEINERT—James Frank *Cadenhead.*

Hays County

SAN MARCOS—Asa Belvin Pritchett.

Hidalgo County

DONNA—Lum Marion Davis. MISSION—Thomas R. Burnett. PHARR—Albion McD. Coffey.

Hill County

BRANDON—Benjamin Clinton Smith. *HILLSBORO*—Karl Adolphus Anderson; *Francis W. Carruthers; Charles Houston Haggard*; William Cullen Spaulding. HUBBARD—Roscoe Etter; Robert Kaskie Lowry. ITASCA—Dutch Kilgo Robison.

Hood County

TOLAR—John Franklin Crawford.

Hopkins County

BRASHEAR—Archer Ben Worsham. SULPHUR SPRINGS—James Jefferson Johnson; Henry William Pickett.

Houston County

CROCKETT—William N. Lipscomb; Monroe A. Thomas.

Howard County

BIG SPRINGS—Raleigh *Lester Davis.*

Hunt County

CELESTE—Eugene William Rufus Williams. COMMERCE—John Russell *Holderness*; Columbus Hyder. GREENV[illegible] Cantrell; William Mason Dickens; James Jefferson Hand [illegible] Elbert Cravens. LONE OAK—*Jack Homer Hall*; [illegible] Lander. WOLFE CITY—Olie Washington McPeters.

Jack County

WIZARD WELLS—Verner Iona Baugh.

Jackson County

GANADO—James Cole Dobbs. LOLITA—Jessie Lee Womack.

Jasper County

JASPER—Karl Chambers.

Jefferson County

[illegible] [illegible]ley Cobb; James William Garth; Burn[illegible] [illegible] Tyler; James Carroll Wallace. POR[illegible] [illegible]; Norman Albert Bussey.

Jim Wells County

ALICE—Newell Wrigley Atkinson; Maury Johnson Perkins. PREMONT—Edward Everett Collins.

Johnson County

ALVARADO—Frederick D. Cooke. BURLESON—Robert Early Forrester. CLEBURNE—James Hutchinson Happel; Albert Emerson Punche. KEENE—Charles Christopher Cooke.

Jones County

ANSON—Frederick Edward Hudson; Amos M. Jones; William Joseph McCreight. STAMFORD—Dallas Southard.

Karnes County

KARNES CITY—Jefferson Woolsey. *KENNEDY*—Charles Michael Kent. *RUNGE—Thomas Alexander* Pressly.

Kaufman County

FORNEY—Ralph Waldo Emerson Bledsoe. KAU[illegible] MABANK—J. L. Pierce; *Robert Eldridge Hearn.* [illegible] ard Eddins Sheppard; Charles Herbert Standifer; [illegible]; Charles Whitcield Castner.

Kendall County

BOERNE—John Francis Nooe.

Kleberg County

KINGSVILLE—*Glenn* Bartlett; Joseph J. Robertson. RIVIERA—Clarence E. Drake.

Lamar County

BLOSSOM—James Sidney Marshall. DEPORT—Edmond Harris B. Steele. PARIS—William W. Fitzpatrick; Lucian Nicholson; Ernest H. Stark; Arlander Selman Graydon.

Lampasas County

LOMETTA—Jesse Corlena McKean.

Lavaca County

MOULTON—John Guido Guenther. SHINER—Emile Clemons Schulze.

Lee County

GIDDINGS—Charles Henry Christian; *Charles Shackleford Gates Jr.*

Leon County

JEWETT—Vinny L. Smith. OAKWOOD—Coleman J. Carter.

Limestone County

BEN HUR—Walter Raymond Russell. COOLEDGE—Joseph John Anderson. MEXIA—Marion Martin Brown; Albert A. Jackson.

Lipscomb County

LIPSCOMB—Coleman Ashton Newland.

Live Oak County

THREE RIVERS—Wesley Shropshire Neal.

Lubbock County

LUBBOCK—Charles Fielding Clayton.

Lynn County

TAHOKA—Ebner Holmes Immon; Lewis Edward Turrentine.

Madison County

MADISONVILLE—Paul James Connor.

Matagorda County

BAY CITY—Albert S. Morton. BLESSING—Lincoln *Frank Putnam.* PALACIOS—John Whitworth Harrison; Henry Hofmann Loos

McCullough County

MERCURY—Samuel B. Locker.

McLennan County

AXTELL—George McAlpin Liddell. EDDY—William E. Lucey; Marcus Polk Smartt. KINGSVILLE—Joseph Harrison Shelton. LEROY—Nicholas Charles Boethel. *MART—Ira Franklin Cannon*; James Elmore Cooke. McGREGOR—Emmott Lemuel Graham; Allen Johnston; Garnett Miller. MOODY—*Pere Moran Kuykendall.*. WACO—Edward C. Brannon; *William Lafayette Crosthwait; Doyle* L. Eastland; Isaac Andrew Gordon; Joseph Henry Graves; Henry Elwood Hoke; Eren Duffin Hodges; Sullivan Ross Jones; John Edens Lattimore; Troy Lee McGlasson.

Paul C. Murphey; John Edward Quay; Charles P. Schenck; George *Herbert Stagner*; Emanuel Toomin; Allen Deering Wages; Wallis S. Witte; William Ferris Curran; Howard Rush Dudgeon; John Edens Lattimore.

MART—Thomas Edison Dixon.

Medina County

DEVINE—George Sidney Woods. HONDO—William Hale Smith.

Menard County

MENARD—Joseph Vincent Dozier; George Brady Miller.

Midland County

MIDLAND—Woods Walker Lynch.

Milam County

BUCKHOLTS—William Carrigan Weir. CAMERON—John L. Denson; David Brougham McGee; Dana Elbra Monroe; Thomas George Van Zandt. GAUSE—Denver Francis Gray. MAYFIELD—James William Reid. *MINERVA*—Royal Kendall Stacey.

Mitchell County

LORAINE—Charles William Stevenson.

Montague County

MONTAGUE—William Walter Davis.

Montgomery County

WILLIS—Earl Levi Sharp.

Motley County

MATADOR—Roscoe Lee Hamilton.

Nacogdoches County

APPLEBY—Charles Henry Tindall. NACOGDOCHES—Arthur E. Sweatland.

Navarro County

BLOOMING GROVE—James Arthur Wilkinson. CORSICANA—Thomas V. Fryar; Fred W. Horn; Dubart Miller; Earl Homer Newton. KERENS—Eugene Phillip Norwood. PURDON—Sampson Cunningham. ROANE—Joshua Powell Wood.

Newton County

CALL—Frank Teeple Blow.

Nolan County

[illegible] Dustin Fillmore. SWEETWATER—William Ed[illegible] [illegible] Dudgeon; Wilbur Abner Dupree; Charles Luther M[illegible] P'Pool.

Nueces County

CORPUS CHRISTI—Everette Odell Arnold; William C. Barnard; Victor E. Bonelli; Herbert Caldwell; Albert H. Eber; John L. Redmond. ROBSTOWN—Noah Dilford Carter.

Palo Pinto County

LUYRA—Thomas Hill Standlee.

Panola County

CARTHAGE—Allen M. Baker. CLAYTON—Joseph Edwards Adams.

Parker County

WEATHERFORD—Henry Solomon Bunch; Albert Lester Jones; Austin Felix Leach. WHITT—Edward Clayton Foster.

Parmer County

FARWELL—Clarence Lucien McClellan.

Pecos County

FT. STOCKTON—Marvin Luther Turney.

Polk County

CAMDEN—Ivison Grimes.

Potter County

AMARILLO—Charles E. Fitzsimmons; Robert Dennis Gish; Dave T. Hanson; George Stewart Murphy; Bascomb M. Puckett; George Thaddeus Thomas; Roy Leonard Vineyard.

Presidio County

MARFA—Martin Luther Fuller; Luther D. Parnell.

Randall County

CANYON—Sam Randall *Griffin.*

Reagen County

BIG LAKE—Brooks Collins Grant.

Red River County

CLARKSVILLE—George Maury Munchus.

Refugio County

REFUGIO—George Edward Glover; Charles Gregory Wright. TIVOLI—Wallace Benton Guinn.

Robertson County

FRANKLIN—Cisero Jackson Connor; Seth A. McConnell.

Rockdale County

TRACY—William Hartford Lyon.

Runnels County

WINTERS—Thomas Vollio Jennings.

Rusk County

HENDERSON—Giles Arthur Deason. LANEVILLE—Allan Hubert Galloway Jr. OVERTON—William Peyton Barton.

San Augustine County

SAN AUGUSTINE—George Percy Rawls.

San Patricio County

MATHIS—Henry Ebehart Luehrs. SINTON—Homer Thurel Elkins.

Scurry County

DUNN—William Henry Morrow. SNYDER—James Madison Bannister; Charles Ross Bullock; Robert Lee Howell; William Riley Johnson.

Shelby County

HASLAM—Charles A. Wyatt. TENEHA—Artemus Homer Martindale. TIMSON—P. C. Clements; Othel Jefferson Gee.

Smith County

TYLER—Joseph F. Baldwin; William R. Cain; Joseph Jerome Livingston.

Starr County

HAMA—John N. Merrick.

Stonewall County

ASPERMONT—David C. Wylie. SWENSON—Richard D. Price.

Tarrant County

ARLINGTON—Joseph Don Collins; Robert Tisdle Spencer. FT. WORTH—Joe C. Alexander; C. B. Austin; Arthur Berry Bordefo; James Davidson Bozeman; Charles F. Carter; Marion Lee Compton; Giles Warren Day; Doc Grisso; Fred Andrew Haggard; Pierre Francis Higgins; William Sullivan Horn; Charles Oliver Hurley.

Harry Allan Logsdon; Jesse Carlos May; Rogers William McKean; James Thomas Montgomery; Young J. Mulkey; Edwin Lethbridge Myrick; William Henry Ogden; John J. O'Reilly; Clifford Charles Parrish; Clyde Harry Pember; John Potts; Eugene Vernon Powell; Frank Gay Sanders; Guy C. Shirey; Edward White; Henry Franklin Wilkins. MANSFIELD—Oliver Abraham Smith.

FORT WORTH—Milton Thomas Asberry; Thomas Burke Bond.

Taylor County

ABILENE—Arthur S. Brown; William Edgar Brown; W. Anda Vee Cash; Thomas Wade Hedrick; Lawrence William Hollis; John Paul Howser; Walter James Mathews; Edgar F. McCall; Luther James Pickard. BUFFALO GAP—James Thomas Risinger.

Terrell County

SANDERSON—Ivy Stansell.

Tom Green County

CARLSBAD—Charles Richard Gowen. SAN ANGELO—Arthur Joseph Boyd; Hubbard Kavanaugh Hinde; James Percy McAnulty; Clarence Ross Miller; Roy Alene Olive.

Travis County

AUSTIN—Albert Fitzhugh Beverly; Hugh Jefferson Davis; George Gilbert; Thomas William Glass; Benjamin Franklin Jones; Matthew Ferdinand Kreisle; Addeson L. Linecum; Edgar Gordon Mathis; Robert Vincent Murray; Zachary T. Scott; Roger Allen Tharp; William Elliott Watt. DELVALE—Edwin Taylor Morris. MANCHACA—Reese F. Curcie. MANOR—Frank C. Gregg.

Trinity County

GROVETON—Clarence S. Murphy. SARON—James Weaver Conley. WESTVILLE—Leland Frazier.

Uvalde County

UVALDE—Clarence Riggs Myrick.

Valverde County

DEL RIO—Shadrack Lawrence Boren; George Harvey Garrett; Walter C. Johnson.

Van Zandt County

CANTON—Willard Clifton Harin. GRAND SALINE—V. Bascom Cozby. WILLS POINT—D. Leon Sanders.

Victoria County

GUADALUPE—George Smythe Beaty. VICTORIA—Lytton Gray Ament; Charles Austin Whittier Jr.; George M. Wilkins.

Walker County

HUNTSVILLE—Eugene H. Bayliss.

Ward County

BARSTOW—Isaac Mayhugh.

Washington County

BRENHAM—Robert A. Hasskarl; Robert Finney Miller; Robert F. Zeiss.

BURTON—Fred Henry Hodde.

Webb County

LAREDO—Horace Curlin Hall; John T. Halsell; Thomas William Penrose. SANTO THOMAS—Henry Shackelford Keller.

Wharton County

EL CAMPO—Charles Washington Gray; Joseph Kopecky.

Wheeler County

MOBEETIE—Harold Earl Nicholson. SHAMROCK—Joseph Exter McDowell.

Wichita County

WICHITA FALLS—Milton Hall Glover; Everet F. Jones; Oliver Birdell Kiel; Quincy Brown Lee; Edward Taylor Miller; Walter S. Tyson; Michael M. Walker.

Willacy County

SARITA—William Henry Cooley.

Williamson County

BARTLETT—Robert Spashe Sutton. GEORGETOWN—Gustave E. Henschen; Rupert Kingsley McHenry; Vivien Peyton Randolph. GRANGER—Ralph McLoughlin. HUTTO—Orville Taylor Bundy. LIBERTY HILL—Whit Dee Fowler; Asa Nowlin. ROUND ROCK—Forest Frances Fowler. TAYLOR—Robert E. Bledsoe; John Calhoun Thomas; Thomas Davis Vaughan. THRALL—Y. Frank Hopkins.

Wilson County

FLORESVILLE—John Vaughan Blake.

Wise County

ALVORD—John H. Walker. PARK SPRINGS—John Norris.

Wood County

WINNSBORO—William Lafayette Baber.

Young County

GRAHAM—Charles B Gant; William O. Padgett. NEWCASTLE—Oscar W. Wilson.

UTAH STATE MEDICAL ASSOCIATION

Officers 1917-18

Fred Stauffer, President..............................Salt Lake City
Vice Presidents—
A. J. Stewart..Provo
Edw. I. Rich...Ogden
Ernest Van Cott...................................Salt Lake City
W. Brown Ewing, Secretary...................Salt Lake City
F. A. Goultz, Treasurer...........................Salt Lake City

Councilor Districts and Officers

First District.—Boxelder, Cache and Morgan counties. E. H. Smith, Councilor, Ogden.

Second District.—Summit, Davis, Salt Lake and Tooele counties. Thos. C. Gibson, Councilor, Salt Lake City.

Third District.—Utah and the counties not given in other districts. H. G. Merrill, Councilor, Provo.

UTAH

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Beaver.........	2,660	413.3	5,523	920	6	..	3	6	1	..
Boxelder.......	5,411	453.7	16,729	1,394	12	..	12	12	4	1
Cache..........	1,164	52.9	26,655	1,411	22	..	14	21	12	2
Carbon.........	1,487	82.6	11,266	625	18	..	12	18	8	3
[1]Daggett.......	.....	.....	......	.....	1	..	..	1	..	..
Davis..........	275	30.5	11,792	1,310	9	..	5	7	1	1
Duchesne.......	2,460	410.0	6,561	1,094	6	..	4	5	1	1
Emery..........	4,153	1,113.2	8,278	2,069	4	..	3	3	..	..
Garfield.......	5,234	5,234.0	3,848	3,843	1	..	1	1	1	..
Grand..........	3,692	1,816.0	1,920	960	2	..	1	1	..	..
Iron...........	3,256	651.2	4,215	843	5	..	5	5	..	..
Jaub...........	3,410	310.0	11,155	1,014	11	..	8	9	3	..
Kane...........	4,215	2,107.5	1,652	826	2	1	..	..	..	..
Millard........	6,601	1,320.8	6,438	1,287	5	1	3	4	..	..
Morgan.........	626	208.7	2,775	925	3	..	2	2	1	..
Piute..........	763	381.5	1,734	867	2	..	2	2	..	1
Rich...........	1,027	1,027.0	1,883	1.883	1	..	1	1	..	..
[2]Salt Lake.......	756	3.2	170,626	722	236	9	142	210	155	43
[3]San Juan.......	7,761	.....	3,366	.....	...	..	...	...	...	..
Sanpete........	1,564	173.8	16,988	1,897	9	..	8	9	4	1
Sevier.........	1,978	219.8	10,741	1,193	9	1	3	7	6	..
Summit.........	1,862	310.3	8,200	1,366	6	..	3	5	..	..
Tooele.........	6,849	1,141.5	8,335	1,389	6	..	3	5	3	1
Unita..........	5,235	523.5	7,483	748	10	3	6	9	6	3
Utah...........	2,034	65.6	41,496	1,919	31	..	18	27	24	6
Wasatch........	4,354	1,451.3	5,406	1,802	3	..	3	3	1	..
Washington....	2,465	410.8	5,495	915	6	1	2	4	..	..
Wayne..........	2,475	1,237.5	1,749	874	2	..	2	2	1	1
[4]Weber..........	541	11.0	42,434	957	49	1	32	38	28	11
Totals........	82,181	172.3	444,746	932	477	17	298	417	260	75

1. Newly organized; area and population included in Unita county.
2. Includes Salt Lake City, population 121,233; physicians 207 [M.R.C. 37].
3. No physicians reported in this county.
4. Includes Ogden, population 32,343; physicians 47 [M.R.C. 10].

HONOR ROLL

Box Elder County

GARLAND—Joseph Edward Day.

Cache County

LOGAN—Weaver Aldus Rush. SMITHFIELD—Ralph Teancum Merrill.

Carbon County

PRICE—Edwin F. Chamberlain; Ralph Elijah Cloward. SUNNYSIDE—John Oliver Cook.

Davis County

KAYSVILLE—Clarence Snow Gardner.

Duchesne County

ROOSEVELT—William Jonathan Browning.

Piute County

MARYSVALE—Clifford Jackson Heath.

Salt Lake County

BINGHAM CANYON—Charles Ellsworth Henneberger. HOLLIDAY—Guy Clifford Emery. MAGNA—Arthur Anson Bird; George Edmund [illegible] ...rthur D. Knott; Harve Bayard Spangler. SALT [illegible] ...ien Alexander; David Kimball Allen; Robert W. [illegible] Baldwin; William Francis Beer Sr.; Chauncy [illegible] W. Black; Charles Edward Brain; Willard Christopherson; Kenneth Allen Crismon; George von Pultinger Davis. John Oscar Evans; William Brown Ewing; George Joseph Field; Robert Welles Fisher; Thomas A. Flood, John Joseph Galligan; Robert Roy Hampton; Ira K. Humphrey; Frederick I. Jansen; Robert T. Jellison. Hyrum L. Marshall; Harry N. Mayo; Woodward Bruce Mayo; Clarence Ambrose Nyvall; William Bowker Preston; Hyrum Young Richards; George F. Roberts; Carl Ludvick Sandberg; Harry Seaver Scott; John F. Sharp; Hugh B. Sprague; Thomas William Stevenson; Clarence Golden Stigall; Francis Carrillo Tyree; Guy Van Scoyoc; Ray Taliaferro Woolsey.

Sanpete County

EPHRAIM—David Oral Beal.

Tooele County

IBAPAH—Joseph Howard Peck.

Uinta County

VERNAL—George H. Cruikshank; George Wesley Green; Homer Erastus Rich.

Utah County

LEHI—George Wallace Hanks. PAYSON—Lynn D. Stewart. PROVO—Leroy Calkins Potter; Frederick Whitaker Taylor. SPRINGVILLE—George Willis Clarke; Frederick Dunn.

Wayne County

FRUITA—James Madison Graham.

Weber County

HUNTSVILLE—Howard Tilghman Wickert. OGDEN—Henry Grady Adams; Frank Kaiser Bartlett; William Riley Brown; Frederick George Clark; *George Fred D*[illegible]; [illegible] Dumke; Royal A. McCune; Leroy Rich Pugmire; Lorin Farr Rich; Walter Edward Whalen.

VERMONT STATE MEDICAL SOCIETY

Officers 1917-18

Clayton H. Bartlett, President..............................Bennington
William Lindsay, Vice President..............................Montpelier
William Gray Ricker, Secretary..............................St. Johnsburg
Edw. H. Martin, Treasurer..............................Middleburg

Councilor Districts and Officers

First District.—James N. Jenne, Councilor..................Burlington
Second District.—Schuyler W. Hammond, Councilor............Rutland
Third District.—Frank E. Farmer, Councilor.............St. Johnsbury
Fourth District—Clinton J. Rumrill, Councilor..............Randolph

VERMONT

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Addison	756	24.3	20,010	645	31	1	12	20	23	5
Bennington	661	15.0	21,378	485	44	..	19	29	21	8
Caledonia	618	13.4	27,235	592	46	1	19	33	30	9
Chittenden	543	4.6	44,524	377	118	1	64	91	62	22
Essex	638	70.8	7,384	820	9	..	3	4	2	..
Franklin	632	12.7	29,866	585	51	1	19	35	36	3
Grand Isle	83	11.8	3,761	537	7	..	..	4	3	..
Lamoille	436	22.9	12,801	673	19	..	8	16	11	2
Orange	676	25.0	18,703	692	27	..	11	19	13	3
Orleans	688	18.5	24,296	656	37	1	18	23	15	6
Rutland	911	12.3	51,007	689	74	1	31	54	55	12
Washington	719	11.0	45,422	698	65	..	32	46	46	6
Windham	795	16.7	27,130	577	47	2	22	30	26	4
Windsor	948	14.8	34,743	542	64	3	30	49	34	6
Totals	9,129	14.2	368,260	576	639	11	288	453	377	86

HONOR ROLL

Addison County

MIDDLEBURG—Jacob J. Ross; Walter James White. ORWELL—Leonard Blake Rowe. VERGENNES—John M. Caisse; William Godfrey Watt.

Bennington County

ARLINGTON—George Albert Russell. BENNINGTON—Anselme Ephrem Houle; John D. Lane. MANCHESTER CENTER.—[illegible] MANCHESTER DEPOT—James *Lyman Lovejoy.* N[illegible] —William Arthur Flood; Edward A. Tobins. P[illegible] Thomas.

Caledonia County

DANVILLE—Charles Emerson Libbey. EAST HARDWICK—Albert *Clark Kinney.* GROTON—Nathan Penwick Caldwell; Henry Latimer Tillotson. [illegible] Dutton George; George Clark Rublee. [illegible] Sheehan. ST. JOHNSBURG—John Woods [illegible] LYNDONV[illegible] Harvey; J[illegible]

Chittenden County

[illegible] Andrews; Sidney Moore Bunker; Albin [illegible] ...rk; Alan Daniel Finlayson; *Horatio N.* H. [illegible] George Eugene Latour. [illegible] Ja[illegible] Robert Leland Maynard; Donald G. McIvor; Pat[illegible] Walter Franklin McKenzie; Edward Francis M[illegible] Smart; George Twitchell; John B. Wheeler. [illegible] Hayes Mitchell. WILLISTON—Harry Leslie Fros[illegible] J. P. Paulsen.

BURLINGTON—Edward Anthony Flynn; Walter Hale Squires.
RICHMOND—Sidney Mitchell Jr.

Franklin County

EAST BERKSHIRE—Herbert Bill Hanson. ENOSBURG FALLS—Ray Brown Thomas. MONTGOMERY CENTER—Rollin Duane Worden.

Lamoille County

MORRISVILLE—George Lucian Bates.
CAMBRIDGE—George Herbert Newton.

Orange County

RANDOLPH—Frank C. Angell. WASHINGTON—William Orrin Hutchinson. WILLIAMSTOWN—Albion Arthur Cross.

Orleans County

DERBY—Fred Noble Aldrich. *GLOVER—Percy Erastus* Buck. NEWPORT—Victor Patrick Genge. NORTH TROY—Rowley Smith Flagg; William Henry White. WEST DERBY—Henry Elijah Somers.

Rutland County

CASTLETON—Frank Henry Everett. DANBY—Edward V. Farrell. PITTSFORD—Thomas J. Hagan. POULTNEY—Edward Crofutt. RUTLAND—Nicholas J. Delahanty; George Guerin Marshall; Ray E. Smith; William Stickney; William Warren Townsend. SUDBURY—Berms Dennis Colby. WALLINGFORD—Sherwin Aldrich Cootey.
RUTLAND—Hugh Henry Hanrahan.

Washington County

BARRE—Joseph Arthur Wark. MONTPELIER—Mitchell Daniel Carey; *Charles Porter* Chandler; Julius Edward Dewey; Frederick Whitmore Harriman. WATERBURY—Stewart Louis Goodrich.

Windham County

BRATTLEBORO—Thomas Rice; Herbert W. Taylor. GRAFTON—Frank Leslie Gilbert. SAXTONS RIVER—Windsor De Forest Bowen.

Windsor County

CHESTER—George I. Roberts. LUDLOW—John P. Kerrigan. SHARON—Everett Jos. Stone. *SPRINGFIELD—Albert Joseph* Greenwood. WINDSOR—Arthur Washington Burnham. WOODSTOCK—Henry Chester Jackson.

MEDICAL SOCIETY OF VIRGINIA

Officers 1917-18

Ennion G. Williams, President..............................Richmond
S. W. Dickinson, First Vice President..............................Marion
Harry T. Marshall, Second Vice President..................University
C. D. Barksdale, Third Vice President..........................Sutherlin
Paulus A. Irving, Secretary-Treasurer..........................Farmville

Councilor Districts and Officers

First.—Clarence P. Jones..............................Newport News
Second.—R. E. Whitehead..............................Norfolk
Third.—A. G. Brown..............................Richmond
Fourth.—E. L. Kendig..............................Victoria
Fifth.—S. T. A. Kent..............................Ingram
Sixth.—John R. Garrett..............................Roanoke
Seventh.—Hunter McGuire..............................Winchester
Eighth.—P. C. Riley..............................Markham
Ninth.—Isaac Peirce..............................*Tazewell*
Tenth.—Chas. H. Davidson..............................Lexington
At large—
Chas. V. Carrington..............................*Richmond*
Powhatan Mancure..............................Bealeton
H. Stuart MacLean..............................Richmond
Geo. J. Tompkins..............................*Lynchburg*
A. L. Gray..............................Richmond
F. H. Hancock..............................Norfolk

VIRGINIA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Accomac	502	11.9	39,628	943	42	..	20	31	31	6
Albemarle	751	11.4	25,868	391	66	..	26	40	39	11
Alexandria	32	0.9	11,791	346	34	..	22	22	20	6
Alleghany	458	14.8	15,212	490	31	..	15	28	21	4
Amelia	371	30.9	8,490	707	12	..	6	8	6	4
Amherse	470	27.6	19,712	1,159	17	1	10	15	9	2
Appomattox	342	57.0	8,352	1,392	6	..	3	5	4	..
Augusta	1,006	16.0	33,700	531	63	2	38	48	39	8
Bath	545	14.9	7,226	555	13	..	5	8	9	1
Bedford	791	29.3	29,549	1,094	27	..	8	19	18	3
Bland	360	90.0	5,154	1,288	4	..	3	3	4	..
Botetourt	548	36.5	18,140	1,209	15	..	8	9	8	..
Brunswick	557	29.3	19,995	1,052	19	..	7	15	13	1
Buchanan	514	171.3	14,263	4,754	3	..	..	1	1	..
Buckingham	584	64.9	15,204	1,689	9	..	3	5	8	1
[1]Campbell	557	7.5	26,624	359	74	..	40	54	51	9
Caroline	529	40.7	16,596	1,276	13	..	6	9	10	1
Carroll	458	45.8	22,439	2,243	10	..	7	8	5	..
Charles City	188	37.6	5,409	1,081	5	..	4	5	3	..
Charlotte	496	49.6	16,108	1,610	10	..	8	8	8	1
Chesterfield	471	39.2	18,197	1,516	12	..	3	11	8	2
Clarks	171	15.5	7,468	678	11	1	5	9	5	2
Craig	333	111.0	5,016	1,672	3	..	3	3	2	1
Culpepper	384	22.6	13,472	792	17	..	6	12	10	1
Cumberland	293	73.2	9,340	2,334	4	..	3	4	3	1
Dickenson	325	54.2	10,260	1,700	6	..	4	5	4	..
Dinwiddie	521	9.3	15,491	206	56	..	35	48	24	11
Elizabeth City	54	2.0	22,513	804	28	2	17	21	11	10
Essex	258	64.5	9,105	2,276	4	..	4	4	3	..
Fairfax	417	20.8	21,154	1,057	20	..	6	13	16	6
Fauquier	666	23.8	22,526	804	28	1	12	22	20	8
Floyd	376	37.6	14,002	1,400	10	..	4	8	5	..
Fluvanna	285	40.7	8,323	1,189	7	..	4	5	5	2
Franklin	697	43.6	26,864	1,679	16	..	8	13	8	2
Frederick	435	18.1	12,787	532	24	..	13	15	17	3

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1. Includes Lynchburg, population 33,497; physicians 55 (*M.R.C. 9*).

VIRGINIA—Continued

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Giles	369	30.7	12,230	1,019	12	1	9	9	9	..
Gloucester	223	18.6	12,218	1,018	12	..	6	9	4	3
Goochland	287	47.8	9,237	1,539	6	..	2	6	5	..
Grayson	425	21.2	22,018	1,102	20	..	9	13	7	2
Greene	155	38.7	7,464	1,866	4	..	1	2	2	..
Greensville	307	30.7	13,447	1,344	10	..	9	9	8	1
Halifax	814	29.1	42,122	1,501	28	..	11	22	15	1
Hanover	512	30.1	16,897	994	17	..	10	15	8	..
[2]Henrico	277	0.8	171,113	503	340	7	235	293	216	92
Henry	444	26.1	18,459	1,085	17	1	8	12	14	1
Highland	422	70.3	5,317	759	7	..	5	5	4	1
Isle of Wight	314	20.9	16,264	1,084	15	..	8	10	8	1
James City	164	18.2	6,779	753	9	1	5	8	6	..
King and Queen	320	53.3	9,802	1,633	6	..	4	5	4	..
King George	180	60.0	6,378	2,126	3	..	2	3	..	1
King William	263	21.9	8,669	722	12	..	5	7	6	..
Lancaster	130	13.0	10,337	1,033	10	1	4	6	6	1
Lee	446	17.8	26,746	1,069	25	..	7	13	6	..
Loudoun	519	14.0	21,167	572	37	..	16	25	19	4
Louisa	516	28.6	16,621	812	18	..	8	11	8	..
Lunenburg	430	39.1	13,564	1,233	11	1	10	10	6	1
Madison	324	27.0	10,055	922	12	..	5	9	9	1
Mathews	94	15.7	9,419	1,569	6	..	5	5	4	1
Mecklenburg	669	29.1	30,711	1,335	23	..	17	18	16	2
Middlesex	146	16.2	9,313	1,034	9	..	5	5	7	2
Montgomery	401	14.3	18,300	653	28	6	14	20	18	3
Nansemond	423	22.3	29,665	1,613	19	..	14	14	15	1
Nelson	473	31.5	17,365	1,157	15	..	6	9	11	1
New Kent	191	27.3	4,682	668	7	..	5	6	3	1
[3]Norfolk	414	1.7	137,762	583	236	4	149	214	157	36
Northampton	239	13.3	18,790	1,043	18	..	15	15	14	1
Northumberland	205	20.5	11,455	1,145	10	..	4	7	5	1
Nottoway	310	18.2	14,262	839	17	..	8	12	11	2
Orange	359	22.4	14,152	884	16	..	11	11	10	2
Page	322	26.8	14,401	1,200	12	..	4	6	8	..
Patrick	485	80.8	18,501	3,083	6	..	3	3	4	..
Pittsylvania	1,015	17.8	51,151	950	57	..	29	46	34	7
Powhatan	273	68.2	6,099	1,524	4	..	2	2	3	2
Prince Edward	356	20.9	14,266	839	17	1	8	12	13	2
Prince George	294	9.2	4,000	125	32	..	28	31	13	9
Princess Anne	279	25.4	11,769	1,069	11	..	5	7	9	..
Prince William	345	20.3	12,691	746	17	..	5	9	9	6
Pulaski	333	17.5	19,171	1,009	19	..	11	12	16	4
Rappahannock	275	34.4	8,044	1,005	8	..	2	5	6	..
Richmond	204	40.8	7,653	1,530	6	..	3	3	3	1
[4]Roanoke	305	2.5	77,024	626	123	2	74	102	76	25
Rockbridge	616	29.3	21,171	1,008	21	..	15	17	11	2
Rockingham	876	18.2	35,905	748	48	..	17	37	35	3
Russell	496	20.7	27,446	1,143	24	..	17	20	10	4
Scott	543	34.0	24,630	1,539	16	..	11	11	4	1
Shenandoah	510	19.6	21,444	824	26	1	9	17	21	2
Smyth	435	21.7	22,665	1,133	20	3	12	17	16	4
Southampton	604	26.3	28,823	1,253	23	..	16	19	21	1
Spotsylvania	413	18.8	10,441	474	22	..	11	18	10	4
Stafford	274	39.1	8,070	1,152	7	..	2	4	4	..
Surry	278	34.7	10,623	1,327	8	..	6	6	7	1
Sussex	515	39.6	14,817	1,139	13	..	6	9	11	2
Tazewell	531	13.6	26,085	668	39	..	26	28	26	7
Warren	216	13.5	8,589	536	16	..	3	9	12	3
Warwick	69	1.7	4,880	122	40	1	19	37	26	7
Washington	604	15.5	35,627	913	39	..	19	31	24	8
Westmoreland	252	28.0	9,363	1,040	9	..	6	8	2	3
Wise	720	17.1	44,751	1,065	42	..	32	34	21	9
Wythe	474	18.2	20,372	783	26	..	10	18	13	3
York	136	22.7	7,767	1,292	6	..	4	4	1	1
Totals	40,262	49.9	2,023,000	806	2,509	37	1,411	1,551	1,971	294

2. Includes Richmond, population 158,702; physicians 326 [M.R.C. 89].
3. Includes Norfolk, population 91,148; physicians 177 [M.R.C. 38], and Portsmouth, population 40,693; physicians 41 [M.R.C. 7].
4. Includes Roanoke, population 46,282; physicians 100 [M.R.C. 22].

HONOR ROLL

Accomac County

CHINCOTEAGUE—Clay Miller Easter. [illegible] Clifford Mallory. NEW CHURCH—Charles [illegible] COCK—James C. Doughty. PARKSLEY—[illegible] Baehe Gill.

Albemarle County

[illegible]n; Hugh T. Nelson Jr.; Chas. [illegible] Wilson. RED HILL—Rich[illegible] Hall Goodwin; Minor Carson [illegible] Smith; Dan Hiter Witt; Hunter Saml. Woodbery. *COVESVILLE—Francis Page Nelson.*

Alexandria County

ALEXANDRIA—Samuel Broders Moore; Llewellyn Powell. BALLSTON—Williamson Crothers Welburn. CHERRYDALE—James Howard Walton. FT. MEYER—Julian M. Cabell. LINCOLNIA—Thomas Franklin Dodd.

Alleghany County

CLIFTON FORGE—Claude Holson Rucker; James Neal Williams; Frank Laird Wysor. IRON GATE—Achilles Douglas Tyree.

Amelia County

AMELIA—Wm. Reid Putney. AMON—James Loving Hammer. JETERSVILLE—Robert John Styers. MATTOAK—Leslie Clyde Burton.

Amherst County

AMHERST—Basil Ellis Strode. NEW GLASGOW—Waverly Stafford Tucker.

Augusta County

FISHERVILLE—Harry F. White. MT. SOLON—Jas. Wright Clarkson. STAUNTON—Richard P. Bell; James Lemuel Martin; Wilbur Moorehead Phelps; Alexander F Robertson Jr. STUARTS DRAFT—Isaac Roy Wagner. WAYNESBORO—Harvey R. Livesay; Wm. Patterson.

Bath County

WARM SPRINGS—Thos. H. Massey.

Bedford County

BEDFORD—Wm Isam Laughon; Geo. L. A. Pogue. HOLCOMBS ROCK—Jas Addison Meriwether.

Brunswick County

BARROWS STORE—Bernard Barrow.

Buckingham County

DILLWYN—Chas A Brown.

Campbell County

ALTAVISTA—John Arnold Board. LYNCHBURG—John Wesley Carroll; John W Davis; Thomas Newman Davis; Arthur Hamilton Deekens; Bernard Hewett Kyle; Jos James Ligon; Wm. Henry Roberts (colored); Simon Harry Rosenthal; James Joseph Ligon.

Caroline County

NEW LONDON—John Randolph Travis.

Charlotte County

PHENIX—Ray Atkinson Moore.

Chesterfield County

BON AIR—Barton Bates McCluer. MIDLOTHIAN—John Lloyd Tabb Jr.

Clarke County

GAYLORD—Lewis Mines Allen. MILLWOOD—McClure Scott.

Craig County

NEW CASTLE—Bernie R Caldwell.

Culpeper County

RACCOON FORD—Jas. Oscar Mundy Jr.

Cumberland County

CUMBERLAND—Wm L Varn

Dinwiddie County

McKENNEY—Edgar Williams Young. PETERSBURG—Chas. Royal Alexander; John Rochester Booth; Walter M. Brunet; Hampden Burke; John Bernard Halligan; Douglas Beverly Johnson; Wm. Baird McIlvaine; Mason Romaine; Jas Thos. Shelburne; Wm. Amos Trevette.

Elizabeth City County

HAMPTON—Joseph Wilton Hope; Harry Dresser Howe; William Edward Knewstep; Paul Jones Parker; Jas. Otho Parramore; Marshall Wray Sinclair; Edward Neth Schillinger; Thomas M. Wood. NATIONAL SOLDIERS HOME—Frederick Elmer Jenkins. PHOEBUS—Ruppert A. B. Lloyd.

Fairfax County

FAIRFAX—Howard Fletcher. FALLS CHURCH—James McNelledge Fadeley; Tunis C. Quick. FT. HUNT—Edwin W. Patterson. VIENNA—Arthur G. Coumbe; Stewart Maxwell Grayson.

Fauquier County

MARKHAM—Philander Chase Riley. MORRISVILLE—W[illegible] Fitzhugh. PARIS—Edgar Ackley Moore. RECTORTOWN—[illegible]ley Noland. THE PLAINS—Robert B. [illegible] WARRENTON—Walter Gordon Trow.

Fluvanna County

COLUMBIA—John James Nelson.
KENTS STORE—Booker Lee.

Franklin County

TAYLORS STORE—Louis C. S. Haynes. UNION HALL—Frederick Pelham Sutherland.

Frederick County

CLEAR BROOK—Chauncey Elmo Dorell. GORE—Charles Augustus Young. WINCHESTER—Walter Cox; Jerome Thurston Quirk.

Gloucester County

BENA—Merritt W. Healy. GLOUCESTER—Landon Elwood Stubbs. WARE NECK—Thomas Rollins Marshall.

Grayson County

INDEPENDENCE—Wayne McLean Phipps. GALAX—Whitfield Painter Davis.

Greenville County

NORTH EMPORIA—Hugh Benjamin Mahood.

Halifax County

SOUTH BOSTON—John Jennette Neal.

Henrico County

ASHLAND—Allen J. Chenery; Edward Le Baron Goodwin. GLEN ALLEN—Alexander McLeod. RICHMOND—Edward Turner Ames; Meriwether L. Anderson; Paul V. Anderson; George E. Barksdale; Quintus Harper Barney; Archie A. Barron; Greer Baughman; Oliver Francis Blankingship; Wyndham Bolling Blanton; James Gordon Boiseau; Marshall L. Boyle Jr; Oliver C. Brunk; Robert Coalter Bryan.

Calvin Childress; John A Cloyd; Milton Buell Coffman; Giles B. Cook; Cornelius Byrd Courtney; Baxter Lindsay Crawford; Beverly Fitzwilson Eckles; John M. Emmett; Gerald A. Ezekiel.

John Blair Fitts; Edward L. Flanagan; Frederick Peter Fletcher; Roy Clyde Fravel; Joseph Francis Geisinger; William Wallace Gill; W. Armestead Gills; John Stewart Gilman; Isaac Harry Goldman; Charles F. Graham; Kenneth Dawson Graves; Alfred Leftwich Gray.

Harrison Llewellyn Harris; Horace Taylor Hawkins; Henry Jackson Hayes; Alvah Livingston Herring; Blanton Hillsman; Frederick Murchison Hodges; Raymond Cottrell Hooker; Erasmus Guy Hopkins; William Benjamin Hopkins; Julius J. Hulcher; Jas. Morrison Hutcheson; Charles Howard Lewis; Frank William Hicks Logan.

Jos. Levering McCabe; John McGuire; Stuart McGuire; Joseph Thompson McKinney; Chas. Wilbur Mercer; Waller Nelson Mercer; John Garnett Nelson; John O'Brien Jr.; Thomas Helm Odeneal; William Lowndes Peple; Charles Phillips; William Branch Porter; Robert Sheffey Preston.

Frank Harrell Redwood; William A. Reese; Charles Louis Rudasill; Turner Southall Shelton; Walter D. Simmons Jr.; Feyette Allen Sinclair; James Henderson Smith; Lewis Botty Staton; Henry S. Stern; *Bronson* E. Summers.

Robert Edward Timberlake; Albert Pierce Traynham; Dorsey Goodwin Tyler; Francis W. Upshur; Junius Ernest *Warinner Jr.*; Francis K. T. Warrick; Talmadge Weatherly; William Robert Weisiger; Beverly Randolph Wellford; Geo. Washington White; Lawther Jackson Whitehead; Robert Graham Wiatt; Leslie B. Wiggs; Carrington Williams; Wm. Franklin Williamson; Robert Grant Willis; Robert Herbert Wright. RIO VISTA—Patrick Michael Carroll.

RICHMOND—John Willis Martin; Roscoe Franklin Thornhill.

Henry County

MARTINSVILLE—Dana Olden Baldwin.

Highland County

CRABBOTTOM—John Franklin Stover.

Isle of Wight County

SMITHFIELD—Samuel Abram Riddick.

King George County

FERRELL—Veola O. Caruthers Jr.

Lancaster County

KILMARNOCK—Morgan E. Norris.

Loudon County

ASHBURN—George [illegible]. LOVETTSVILLE—Carroll Edward Foley. [illegible] Mortimer Thompson. WATERFORD—Leslie T. [illegible].

Lunenburg County

DUNDAS—Robert Lucas Ozlin.

Madison County

UNO—Early B. *Dorell.*

Mathews County

CARDINAL—Eric Theophile Sandberg.

Mecklenburg County

CHASE *CITY*—*Edward* Ballard Brooks; Adam T. Finch.

Middlesex County

HARMONY *VILLAGE—James* Allen Bennett. LOT—Benjamin *Blanton* Dutton.

Montgomery County

CAMBRIA—Ollie Allison Ryder. EAST RADFORD—Jacob C. *Bowman.* RADFORD—Wm. O. Poindexter.

Nansemond County

SUFFOLK—Wm. Theodore Gay.

Nelson County

AVON—James Filmer Hubbard.

New Kent County

NEW KENT—John Bolling Valden.

Norfolk County

BERKLEY—George B. West. NORFOLK—James W. Anderson; Wm. E. Bailey; Henry Colmore Bradford; Israel Brown; *Samuel Elkan Brown*; Rhodric W. Browne; George B. Byrd; *Clarence Wills Cowper*; John Daugherty; Charles Joseph Devine; *Stephen Rodzel Donohoe Jr.*; Herbert R. Drewry; Wilson *Elliott Driver.*

Garland E. Faulkner; Lomax Gwathmey; Frank H. Hancock; Charles *Hatcher*; Joseph Stewart Hume; Claude Dalby Kellam; Beverly Randolph Kennon; Burnley Lankford; John Marion Love; Junius F. *Lynch*; *Robt.* Holman Noell.

Andrew Lyman Pacy; George Alley Renn; Nathaniel F. Rodman; *Harry* Ralph Seelinger; Charles C. Smith; Herbert Drew Snyder; *Robert* S. Spilman; Daniel Trigg; John Quincy Adams Webb; Robert Edward Whitehead; Readding Lloyd Williams; *Thomas* V. Williamson. *PORTSMOUTH*—Sherwood Dix; Joe Clinton Dunford; Gray G. Holladay; Samuel Poindexter *Oast* Jr.; Wilson Pendleton; Lonsdal Joseph Roper.

NORFOLK—Marion Stevenson Fitchett; Claiborne Willcox.

PORTSMOUTH—William Karp.

Northampton County

EASTVILLE—William Bell Trower.

Northumberland County

WICOMICO CHURCH—Samuel Downing.

Nottoway County

BLACKSTONE — Arthur Hooks. BURKEVILLE — Robert Emmett *Jones Jr.*

Orange County

ORANGE—Isaiah Allan Jackson; Frank Garrett Scott Jr.

Pittsylvania County

DANVILLE—Henry A. Brady; Samuel Tilden Elliott; Wm. B. Fowlkes; Edward Howe Miller Jr.; Albert Lincoln Winslow. MUSEVILLE—Oscar E. Hedrick. SUTHERLIN—Clyde Lester Bailey.

Powhatan County

BALLSVILLE—Roscoe C. Carnal. TOBACCOVILLE—Otis Hillsman Whitlock.

Prince Edward County

FARMVILLE—Charles Bledsoe Crute; Thomas Griffin Hardy.

Prince George County

CITY POINT—Maurice Arthur Selinger; Hubert Lee Wyatt. HOPEWELL—James Spencer Burger; Jeffrey Neese Elder; Robert Julius Evans Jr.; Frank Levinson; Joash Yohannan; Roscoe W. H. Buckner; Seth *Bridgman Perry.*

Prince William County

HAYMARKET—Wade Cleveland Payne. MANASSAS—William Fewell Merchant; Walter A. Newman; John Downing Williams. QUANTICO—Charles L. Fackler; Edgar D. Smith.

Pulaski County

DRAPER—Edgar Clay Harper. PULASKI—Charles Ewing Dyer; James Walker Tipton. SNOWVILLE—Forrest T. Summers.

Richmond County

NEWLAND—*John* Hampton Hare.

Roanoke County

AIRPOINT—*Charles Edward* Sears. CATAWBA SANITARIUM—Dean Baldwin Cole. HOLLINS—Alen Jackson Black. *ROANOKE*—John Otto Boyd; Samuel *Beverly* Cary; Paul Davis; *Douglas* Shelburne Divers; Frank Albert *Farmer*; *Everett* Russell Ferguson; Clifford Algernon Folks; Hugh Johnson Hagan; Elijah Maxie Hicks Jr.; George Samuel Hurt; William Shirey *Keister*; James Warren Knepp.

George Madison Maxwell; Ernest Helm Muse; William Leven Powell; Lewis Geo. Richards; James H. Roberts; Richard Gordon Simmons; Carl Otto Wolff. SALEM—Guy B. Denit.

ROANOKE—Lylburn Clinton Downing; Alfred Power Jones; Hugh Henry Trout.

Rockbridge County

LEXINGTON—John William Hobbs Pollard; Reid White.

Rockingham County

DAYTON—*George* Frank Hollar. ELKTON—*Ernest* Brubaker Miller. HARRISONBURG—Thomas Clinton *Firebaugh.*

Russell County

CLEVELAND—James *Menifee* Talbee. CLINCHFIELD [illegible] jamin Nickels. DANTE—*Rolan Eldridge* [illegible] Samuel Merriman *Ford.*

Scott County

CLINCH—A. Null Osborne. CLINCHPORT—Eugene Patrick Cox; Charles Radford Fugate. *GATE CITY*—Edwin M. Corns.

Shenandoah County

FORESTVILLE—Allen Casper Biller. WOODSTOCK—Carl William Shaffer.

Smyth County

CHILHOWIE—*Ezra* Eugene Neff. MARION—Ray Carrington Blankenship; Francis Beattie Hutton Jr.

CHATHAM HILL—David Jackson Buchanan.

Southampton County

BOYKINS—George Harrison Musgrave.

Spotsylvania County

FREDERICKSBURG—Joseph Nicholson Barney; Urban F. Bass; Frank Cushing Pratt. SPOTSYLVANIA—William A. *Harris.*

Surry County

CLAREMONT—George Washington Lacey.

Sussex County

STONY *CREEK*—Andrew Daniel Parson. WAVERLY—Hartwell Graham Stoneham.

Tazewell County

NORTH TAZEWELL—Jack Walter Witten. [illegible] Martin Luther *Sowers.* [illegible] RAVEN—*Merwin* B. M[illegible] SHAWVER MILL—*James Thornton Neel.*

Warren County

BROWNTOWN—Charles *Franklin Updike. FRONT ROYAL*—Robert P. Cooke; William Justin Olds.

Warwick County

NEWPORT NEWS—Otis Taylor Amory; Walter *Cleveland Caudill*; *Robert Allen Davis*; Thomas J. Kagey; Royal *Howard* McCutcheon; *Robert* Whitehead; Frank Delaplaine Willis.

Washington County

ABINGDON—David Leighton Kinsolving; George Victor Litchfield Jr.; William Wallace McChesney; James Coleman Motley. BRISTOL—Nicholas Ivan Ardan; *Hamil* Smyth Scott; William Scarff Wiley. *LODI*—William *Hervey* Remine.

Westmoreland County

COLONIAL BEACH—Wm. Landon *Brent*; *George Blight Harrison.* HAGUE—Richard T. *Arnest.*

Wise County

APPALACHIA—[illegible] *Byrdwill* Peters Jr.; Harry Richard Smith. [illegible] Wolfe. GLAMORGAN—John Thomas Ramsey. [illegible] Sounders. *PULASKI*—Wm. Andrews Lucas. RODA—John Adolph Rollings. STONEGA—George Garland Rhudy. TOMS CREEK—Charles Clay Carr.

Wythe County

MAX MEADOWS—Lewis Sidney Herndon. RURAL RETREAT—*Alfred* Bryson Greiner. WYTHEVILLE—*Edward Percy* Odendilhal.

York County

GRAFTON—Stanhope B. Berkley.

WASHINGTON STATE MEDICAL ASSOCIATION

Officers 1917-18

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C. H. Thompson, Secretary-Treasurer	*Spokane*
J. H. O'Shea, Assistant *Secretary-Treasurer*	

HONOR ROLL

Adams County

RITZVILLE—Lewis Adolphus Lavanture.

Benton County

KENNEWICK—LeGrande Spaulding. RICHLAND—Claire Dutton Hopper.

WASHINGTON

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Comm'd in M.R.C., etc.
Adams	1,912	191.2	15,350	1,535	10	..	4	9	3	1
Asotin	606	101.0	7,631	1,271	6	..	3	3	..	..
Benton	1,671	185.7	7,937	881	9	1	6	7	2	2
Chelan	2,900	96.7	23,261	775	30	3	14	21	15	3
Clallam	1,726	156.9	7,595	690	11	..	9	9	5	1
Clarke	634	24.4	35,383	1,360	26	4	11	21	12	5
Columbia	858	78.0	7,042	640	11	..	6	6	1	3
Cowlitz	1,153	104.8	15,980	1,452	11	1	6	9	10	3
Douglas	1,787	223.4	9,227	1,163	8	..	5	6	1	2
Ferry	2,220	555.0	4,974	1,243	4	..	1	1	..	..
Franklin	1,206	201.0	8,559	1,426	6	..	5	6	..	2
Garfield	694	115.7	4,403	733	6	..	4	5	..	..
Grant	2,720	302.2	8,698	976	9	..	3	7	2	..
Grays Harbor	1,927	47.0	50,530	1,232	41	..	25	36	27	14
Island	208	52.0	6,774	1,693	4	..	4	4	2	1
Jefferson	1,747	145.6	10,253	854	12	..	5	7	3	2
[1]King	2,111	3.9	412,077	771	534	31	271	436	316	83
Kitsap	371	17.7	25,589	1,219	21	..	13	19	8	5
Kittitas	2,329	110.9	25,027	1,191	21	..	15	16	4	2
Klickitat	1,825	152.1	10,180	848	12	1	4	9	2	2
Lewis	2,369	67.7	44,514	1,271	35	..	20	27	23	5
Lincoln	2,302	88.5	21,606	831	26	1	17	21	17	3
Mason	930	232.5	6,137	1,534	4	..	..	2	3	..
Okanogan	5,221	307.1	18,871	1,110	17	2	9	13	..	3
Pacific	895	81.4	17,312	1,573	11	..	8	8	10	2
Pend Oreille	1,320	220.0	7,655	1,275	6	..	4	6	..	1
[2]Pierce	1,701	9.2	168,476	915	184	7	91	137	124	42
San Juan	178	22.2	4,095	511	8	..	3	4	3	1
Skagit	1,774	47.9	40,168	1,085	37	..	23	33	25	11
Skamania	1,685	561.7	3,761	1,253	3	..	..	1	..	..
[3]Snohomish	2,064	29.5	84,946	1,212	70	2	29	53	47	12
[4]Spokane	1,756	7.8	199,160	840	237	9	134	198	147	37
Stevens	3,866	168.1	28,412	1,235	23	..	8	18	13	4
Thurston	709	39.4	23,168	1,287	18	3	11	16	9	3
Wahkiakum	267	89.0	3,625	1,208	3	..	2	2	2	..
Walla Walla	1,265	32.4	41,604	1,066	39	1	13	25	11	1
[5]Whatcom	2,082	39.3	68,018	1,284	53	..	30	42	30	4
Whitman	2,108	45.8	39,062	849	46	3	25	37	23	10
Yakima	5,059	81.3	41,709	694	60	3	45	54	44	6
Totals	66,836	39.9	1,558,808	9,245	1,673	72	809	1,334	974	281

1. Includes Seattle, population 366,445; physicians 491 [M.R.C. 82].
2. Includes Tacoma, population 117,446; physicians 148 [M.R.C. 35].
3. Includes Everett, population 37,205; physicians 32 [M.R.C. 6].
4. Includes Spokane, population 157,656; physicians 210 [M.R.C. 33].
5. Includes Bellingham, population 34,362; physicians 38 [M.R.C. 4].

Chelan County

CASHMERE—Harry Martin. WENATCHEE—August Edward Gerhardt; Alexander Wood Seibert.

Clallam County

PORT ANGELES—Frederick T. Hyde.

Clarke County

CAMAS—Walter Winfield Looney. RIDGEFIELD—Ralph Spencer Stryker. VANCOUVER—Joe Bennett Blair; Herbert Clay Liesser; Clair Clarion Wilcox.

Columbia County

PAYTON—Ransom J. Chase Jr.; Diedrich George Brunjes. John Cushman Lyman.

Cowlitz County

CASTLE ROCK—Eben Wesley White. KELSO—Floyd Alvah Bird; Charles R. Glenn.

Douglas County

BRIDGEPORT—George Waltham Phillips. MANSFIELD—Edward

Franklin County

CONNELL—Harry Edmond Wilson. PASCO—Shirley Quincy Elmore.

Gray's Harbor County

ABERDEEN—Oliver R. Austin; Leon Lewis Goodnow; Lawrence Hopkinson; John B. Kinne; Howard C. Randolph. ELMA—Charles Worley Jones. HOGUIAM—Arvid E. Anderson; Randolph F. Hunter; George Ira Hurley; John F. MacDonald. MONTESANO—Max William Brachvogel; Guy Elliott Marcy; Walter Byrd Swackhamer.

McCLEARY—Berton E. Fleming.

Island County

COUPEVILLE—Earl Francis Ristine.

Jefferson County

FT. WORDEN—Frank J. Lemon; William Henry Payne.

King County

Bc [illegible] ndt. BLACK DIAMOND—John Anderson Gc [illegible] Henry Lyon. KENT—Arthur Richard [illegible] KIRKLAND—Ernest Collett McKibben. SEATTLE—Harry Eugene Allen; Roy Chester Baumgarten; George W. Beeler; Charles Chester Benedict; Charles Allen Betts; Ernest Leslie Bickford; George Irvin Birchfield; Forest A. Black; Theodore Lawrence Bordsen; Hubbard Thomas Buckner; Carl M. Burdick; Henry Clay Burson.

Arthur Phinney Calhoun; Frank M. Carroll; William George Cassels; H. E. Coe; Willis Hiram Corson; Charles Basil Cowan; William Frederick Cunningham; William O. Cutliffe; Francis Joseph Delaney; Charles E. Eaton; James B. Eagleson; Orange Edwards; Bruce Elmore; Walter Everly.

Fred Julius Fassett; Edward Paul Fick; Frank Pierce Gardner; Wilho Arvid Groenlund; David Connelly Hall; Marco M. Hansen; Arthur Elias Henby; John Maurice Henderson; Stuart Hooker; John Wilson Hunt; William Edwin Joiner; Everett Orville Jones.

William Carlyle Kanter; Walter Kelton; William Charles Kintner; Howard James Knott; Ertle C. Lanter; Constantin Y. Lapidensky; Albert Lessing; John Albert Mapes; Frank T. Maxson; Charles Fletcher Maxwell; Joseph Andrew McKee; Walter D. Merritt; Walter Arthur Monnich; Marion Michael Null; Herbert C. Ostrom; Willard Grant Palmer; Ivan A. Parry; Alexander Hamilton Peacock; Richard Wilbert Perry; Reginald Copeland Plummer; Nevin Breisbach Pontius.

Hiram Martin Read; Ernest Slemmons Reedy; Waldo Richardson; Samuel Boyd Ross; Joseph Henry Sayer; E. B. Schrock; Ivan James Daniel Shuler; Austin U. Simpson; Edmund Howard Smith; Robert Percy Smith; Robert M Stith; George Wilkins Swift.

Harold Benjamin Thompson; Robert Newton Tooker; Donald Vaughn Trueblood; Paul A Turner; Pearl Caleb West; Kenelm Winslow; Clarence B. Wood; Nathan P. Wood . SELLECK—Ralph Lincoln Sweet.

SEATTLE—Cline Fleming Davidson; Harry Hiram Hewitt; Sherman Rogers.

Kitsap County

BREMERTON—Walter V. Jones; Ray Schutt; Charles M. Tinney. FT. WARD—Charles H Stearns. PORT BLAKELEY—Cecil C. Kelam. PORT GAMBLE—Edmond Gottlob Klanke.

Kittitas County

ELLENSBURG—Albert L. McClanahan.

ROSLYN—Victor Pao.

Klickitat County

GOLDENDALE—Frank Hayward Collins. WHITE SALMON—John Whitfield Gearhart.

Lewis County

CENTRALIA—Herbert Yeomans Bell; Frank James Bickford; Emory Leroy Kuiskern. NAPAVINE—Frederick John Cullen. WINLOCK—Earle Vernon Sheafe.

Lincoln County

ALMIRA—John Franklin Knox. EDWALL—Joseph C. Brugman. SPRAGUE—Eugene Henry McCaffrey.

Okanogan County

OKANOGAN—Lorenzo Simeon Dewey. TONASKET—Harry B. Clough. TWISP—James Burton Couche .

Pacific County

RAYMOND—Edward Randolph Perry. SOUTH BEND—Francis W. Anderson.

Pend Oreille County

METALINE FALLS—John Hiett.

Pierce County

FT. STEILACOOM—Albert Cross Stewart. Frank Tozer Wilt. PUYALLUP—Shirley P. Barry Warner Melvin Karshner. SUMNER—Whiting Benoni Mitchell. Carl Lockwood Taylor; William Winfield Wick. TACOMA—Robert Aurand Allen; Harry Clyde Blair; Christian J. Brobeck; Paul Irving Carter; Thomas Benjamin Curran; Charles Herman DeWitt Jr.; C. P. Gammon; Warren Jeremiah Hough; Edwin W. Janes; Hinton Denney Jonez; Joseph Patrick Kane; Charles Reuben McCreery; William Bernard McNerthney; William Alexander Monroe; Edwin Ashbury Montague; Roy Adelbert Morse; Alvia George Nace; Burton E. Paul; Warren B. Penney.

Wilmot DeLeo Read; Edwin Bruce Rhea; Edward Antoine Rich; Frederic Henry Schroeder; Leslie Bennet Sims; Joseph Sebastian Smeall; Karl Sutherland Staatz; Joseph R. Turner; Roscoe Samuel Van Pelt; Ernest Cattron Wheeler; Horace J. Whitacre; Harry Gaylord Willard; Charles Stuart Wilson; James R. Yocum.

TACOMA—Hiram S. Argue; Stephen Andrew De Martini.

San Juan County

FRIDAY HARBOR—Conner Ouerbacke Reed.

Skagit County

ANACORTES—Samuel Gordon Brooks; Austin Shaw. CONCRETE—Ezra Franklin Mertz. LYMAN—Faris Morell Blair. McMURRAY—Hurbert Livingstone Miller. MT. VERNON—Rufus J. Cassel; Harry T. D'Arc; Adolph Jacob Osterman. SEDROWOOLEY—Charles Morris Frazee; Charles Carlton Harbough; Joseph Hehir.

Snohomish County

EVERETT—Thomas Greene Clarke; Albert Plummer Duryee; Harry Preston Findley; Irving W. Parsons; James Spencer Purdy; John K Stewart. MARYSVILLE—John Dillon Thompson. MONROE—Edward W. Cox; Charles Harold Soll. SNOHOMISH—James A. Durrant; Harvey Loud Eldridge. SULTAN—Henry Webster Bortner.

Spokane County

CHENEY—John Fassett Edwards. FAIRFIELD—George Washington Ensley. FT. GEORGE WRIGHT—Ralph N. Newton. SPOKANE—Arthur Betts; C. E. Butts; John G. Byrne; Max Rosecrans Charlton; Isaac Sidwell Collins; Charles Franklin Elkenbary; Robert Howard Farley; William S. Frost; Roscoe L. Ghering; James Chapman Graves Jr.

Robert North Hamblen; Walter Webster Harrington; Ralph Hendricks; Frank L. Hubbard; Roy Lee Laird; Samuel E. Lambert; Irving Martin Lupton; James Green Matthews; William Hutchinson Morse; Fred Bucklin Nather; Rufus Ingalls Newell.

William Michael O'Shea; Russell Clifton Parr; Wiliam Jonathan Pennock; William R. L. Reinhardt; Paul Cole Ridpath; Harry Hungate Robinson; Pius Aloysius Rohrer; Frank Rose; Frederick Good Sprowl; Herbert Edward Wheeler; Fred J. Whittaker.

SPOKANE—Howard Rouse.
DEER PARK—Henry Herbert Slater.

Stevens County

CHEWELAH—Charles Anderson Hauber; Duncan Daniel Monroe. COLVILLE—Ralph Frank Goetter; William John Jones.

Thurston County

OLYMPIA—Kenneth Lawrence Partlow; Nathaniel Embury Roberts. TENINO—Frederick William Wichman.

Walla Walla County

TOUCHET—John William Rose. WALLA WALLA—Frank Crawford Robinson; Wallace Alexander Pratt; Charles Edwin Montgomery.

Whatcom County

[illegible] ddard Howe; Isaac William Powell; Jacob Sh[illegible] y Will Shryock.

Whitman County

COLFAX—Frank Adolph Bryant; Rolla Bennett Hill; William Albert Mitchell. ELBERTON—Asher W. VanKirk. LYNDEN—Frank Leighton Wood. P[illegible] .N—Douglas McIntyre. TEKOA—[illegible] August Burg.
ROSAL[illegible] Wells Brand.

Yakima County

FT. SIMCOE—Thomas Everett Griffith. *NORTH YAKIMA*—William Herbert Boone; George Walter Cornett; Alfred Joseph Helton; William L. McClure; Julius Girard Newgord.

WEST VIRGINIA STATE MEDICAL ASSOCIATION

Officers 1917-18

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Charles O'Grady, First Vice President........................Charleston
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J. Howard Anderson, Secretary...................................Marytown
H. G. Nicholson, Treasurer..Charleston

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First District.—Brook, Hancock, Marion, Marshall, *Ohio, Taylor* and *Wetzel counties. H. R.* Johnson, Fairmont, *Councilor.*

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Third District.—*Braxton,* Clay, Calhoun, Doddridge, Gilmer, Harrison, Nicholas, Lewis, Ritchie, *Upshur* and Webster counties. M. T. Morrison, Sutton, Councilor.

Fourth District.—Cabell, Jackson, *Mason, Putnam,* Pleasants, Roane, Tyler, Wood and Wirt counties. Geo. D. Jeffers, Parkersburg, Councilor.

Fifth District.—Lincoln, *Logan, McDowell,* Mercer, Mingo, Monroe, Summers, Wayne and Wyoming counties. Wade H. St. Clair, Bluefield, and J. E. McDonald, Logan, Councilors.

Sixth District.—Boone, Fayette, Greenbrier, Kanawha, Pocahontas and Raleigh counties. P. A. Haley, Charleston, and H. L. Goodman, McKendree, Councilors.

WEST VIRGINIA

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Barbour........	348	21.7	17,070	1,066	16	..	9	9	12	1
Berkeley........	325	9.1	23,845	662	36	2	15	24	22	8
Boone..........	506	56.2	11,890	1,321	9	..	6	8	7	2
Braxton........	517	25.8	26,030	1,301	20	..	17	18	10	2
Brooke.........	89	4.7	13,930	733	19	1	13	13	12	3
[1]Cabell..........	261	2.6	59,409	594	100	2	52	84	70	14
Calhoun........	286	28.6	11,981	1,198	10	..	4	7	4	1
Clay............	332	41.5	11,683	1,460	8	..	4	7	3	3
Doddridge......	317	28.8	12,672	1,152	11	..	6	7	6	1
Fayette.........	667	8.8	66,441	874	76	..	48	65	46	9
Gilmer..........	331	25.5	11,379	875	13	..	4	11	2	2
Grant...........	461	65.8	8,250	1,178	7	..	4	4	5	..
Greenbrier......	998	31.2	27,862	870	32	..	12	24	18	1
Hampshire.....	648	81.0	11,694	1,461	8	..	4	5	4	..
Hancock........	83	5.2	13,220	826	16	1	12	15	13	4
Hardy..........	574	95.7	9,684	1,614	6	..	2	5	3	1
Harrison.......	416	3.8	63,484	577	110	6	59	91	60	7
Jackson........	461	23.0	20,956	1,047	20	..	9	15	5	2
Jefferson.......	211	8.8	15,889	662	24	..	6	12	23	1
[2]Kanawha.......	860	5.3	100,993	627	161	4	95	134	96	34
Lewis...........	393	12.3	19,231	600	32	..	16	27	20	3
Lincoln.........	418	29.8	24,163	1,727	14	..	4	9	4	2
Logan..........	438	10.9	19,966	499	40	..	27	37	23	3
McDowell.......	533	8.3	69,105	1,079	64	..	49	60	45	7
Marion.........	315	4.0	50,359	645	78	1	36	57	59	7
Marshall........	310	7.4	36,727	874	42	1	23	30	28	7
Mason..........	475	21.6	23,019	1,046	22	..	10	16	6	3
Mercer..........	419	6.4	49,574	762	65	..	51	61	50	8
Mineral........	349	16.6	19,442	925	21	..	13	17	15	2
Mingo..........	416	14.3	25,322	935	29	..	22	28	24	7
Monogalia......	358	7.6	28,192	599	47	..	24	31	28	7
Monroe.........	457	25.9	13,055	727	18	1	10	11	7	1
Morgan.........	233	21.2	8,253	750	11	..	6	8	5	..
Nicholas........	680	24.3	22,295	792	28	..	17	25	3	3
[3]Ohio............	107	1.0	64,541	603	107	..	61	81	86	11
Pendleton......	699	63.5	9,482	862	11	..	5	11	2	2
Pleasants......	132	14.5	8,074	897	9	..	4	4	4	1
Pocahontas....	904	47.6	19,241	1,012	19	..	14	14	8	2
Preston.........	650	20.3	28,979	905	32	..	25	26	19	3
Putnam.........	336	22.4	19,503	1,300	15	..	4	9	1	1
Raleigh.........	597	13.9	35,264	820	43	1	22	40	33	4
Randolph......	1,036	27.3	32,127	871	38	..	16	29	27	6
Ritchie.........	453	19.7	17,875	777	23	..	12	15	19	4
Roane..........	522	24.9	22,776	1,084	21	..	14	19	5	6
Summers.......	369	19.4	19,991	1,052	19	..	15	19	10	3
Taylor.........	175	10.3	17,703	1,041	17	1	6	11	9	2
Tucker.........	405	23.8	22,502	1,323	17	..	12	12	10	2
Tyler...........	260	13.0	16,211	810	20	..	11	12	12	3
Upshur.........	351	17.5	18,039	901	20	..	10	15	13	1
Wayne..........	517	25.8	24,418	1,228	20	..	5	17	7	1
Webster........	583	64.8	10,276	1,141	9	..	5	8	5	..
Wetzel.........	357	15.5	24,567	1,068	23	1	10	15	12	2
Wirt............	218	36.3	9,047	1,507	6	..	3	4	2	..
Wood...........	364	5.2	40,590	579	70	1	36	53	39	2
Wyoming.......	502	71.7	11,860	1,694	7	..	5	5	..	1
Totals........	24,024	13.7	1,420,151	807	1,759	23	994	1,394	1,070	213

1. Includes Huntington, population 47,686; physicians 90 [M.R.C. 14].
2. Includes *Charleston,* population 31,060; physicians 90 [M.R.C. 20].
3. Includes *Wheeling,* population 43,657; physicians 95 [M.R.C. 10].

HONOR ROLL

Barbour County

CENTURY—John Pickering Farson.

Berkeley County

MARTINSBURG—Ernest H. Bitner; *Calvin E. Clay;* Charles Stuart Cowie; William Thornton Henshaw; *Marvin Hallida* Porterfield; David Tressler Williams; Samuel Gray.
INWOOD—Victor Leslie Glover.

Boone County

MADISON—David Abshire. SETH—Mark Sutpin.

Braxton County

BOWER—Geo. Leedom Pierce. GASSAWAY—Finly Kyle Vass. Burke; Leo Huth.

Brooke County

COLLIERS—Raymond Leslie Focer. FOLLANSBEE—Charles Perry

Cabell County

HUNTINGTON—Ray *Maxwell Bobbitt;* Charles M. Buckner; Denis Joseph Cronin; William M. *Dickerson; Henry Drury Hatfield;* James Oscar Hicks; Cassius C. Hogg; Jones Ross *Hunter;* Harry W. Keatley; Isaac Richard Le Sage; Joseph Wm. Lyons; Julius C. Schulz; James Fred Van Pelt; Robert *Johnson* Wilkinson.

Calhoun County

DOUGLAS—Robert Fulton Ellison.

Clay County

BENTREE—Rufus Emory Woodall. WIDEN—Richard H. Eanes.
WIDEN—John Edward Miller.

Doddridge County

BLANDVILLE—John O'Brien Jr.

Fayette County

CANNELTON—*John* Samuel Shaffer. CAPERTON—[illegible] White Barber. HARVEY—Harry Howard Bolton Jr. GAMOCA—[illegible] Floyd Grisinger. KINGSTON—*Charles* Gordon Willis. MARTING—Frank J. [illegible] Shirkey. MONTGOMERY—Orlando Waldo Hodges. [illegible] D. Lewis.

Gilmer County

CONINGS—Harry Dixon Law.
SAND FORK—John Ervin Corkrean.

Greenbrier County

LEWISBURG—Harry Lee Beard.

Hancock County

WEIRTON—*Israel Levendorf;* John Benedict Makin; Harold Henderson; Charles Augustus *Clemmer.*

Hardy County

LOST CITY—Harry West Rollings.

Harrison County

CLARKSBURG—Solomon Leon *Cherry;* Irving Delbert Cole; Herbert H. Haynes; Robert Gerhart Hood; Walter Allen Johnson. SALEM—Edward Davis. WOLF SUMMIT—John Eldon Corbin.

Jackson County

RIPLEY—*Ray* Kessel. TOPINS GROVE— Willie Herbert Howell.

Jefferson County

KABLETOWN—Alexander H. S. Rouse.

Kanawha County

CHARLESTON—Maury Anderson; Thomas Maxfield Barber; Timothy L. *Barber; Henry* Geo. *Bieler;* George H. Barksdale; John *Egerton Cannaday;* Lewis Clyde Covington; Eugene A. Davis.

Patrick Lamb Gordon; Curtis Thos. Hayden; Earl Bennett *Henson;* Atlee Mairs; Morris Isidore Mendeloff, John William Moore; Alvah Londus Parsons; Lawrence A. Petty; Walter W. Point; Howard Cecil Sarver; Wilbur Fisk Shirkey Jr. CLENDENIN—Mark Edgar Caldwell. HANDLEY—*Howard* M. Batson. HANSFORD—Leroy Jefferson Butler; Ira Moser Derr; Chas. P. S. Ford; Chas. R. Irving; Edw. Chadwick McClees. MALDEN—Arthur Wise DeBell. QUINCY—Wyndham Bolling Robertson. SHARON—William Clifford Mays. SOUTH CHARLESTON—Asahel Clarence Lambert.
CARBON—Julian Warrington Ashby.
CHARLESTON—William Loraine Jones.
HANSFORD—Joseph Culvrain Ford; Harry Easley Whaley.

Lewis County

CAMDEN—William Henry Greene. ROANOKE—Frank Calphon Shafer. WESTON—Aubrey Francis Lawson.

Lincoln County

IVATON—Rush Floyd Farley. WOODVILLE—Dennis Bliss Jarrell.

Logan County

HOLDEN—Ottis Peyton Chapman; John Shackleford Gibson. OMAR—Watson Staley Rowan.

Marion County

FAIRMONT—Andrew J. Harness; James Wilson McDonald; John E. Offner; Rawley Holland Powell; Colin Reed Weirich.
BARRACKVILLE—Etley Price Smith.
WORTHINGTON—Waitman Willey Orr.

Marshall County

CAMERON—William Phillips Sammons. McMECHEN—Archie Bowen Rinehart. MOUNDVILLE—Alfred F. Compton; David B. Ealy; John Henry Luikart. NUSS—Esley Taylor Lake. SHERRARD—*Joseph Hart* Ferguson.

Mason County

HENDERSON—Ulysses Grant *Arnett.* LEON—Charles Thomas Whiteside. POINT PLEASANT—Edward McElfresh.

McDowell County

ALGOMA—William Edward Cook. ASHLAND—David Patteson Scott. KEYSTONE—Thomas Gooch Tickle. KIMBALL—Harlow Richard Connell. WELCH—Malcolm Peel Dillard; Milton Easley Jones. James M. Shuler.

Mercer County

BLUEFIELD—William Oswell Hearn; William Clary Slusher; Harry George Steele; Thurman Elroy Vass. CRYSTAL—Richard Ovid Rogers. HIAWATHA—Fred William Barger. PRINCETON—Robert King Buford; Henry Clay Hays.

Mineral County

KEYSER—William E. Ford. RIDGELEY—Joseph Kile Cowherd.

Mingo County

EDGARTON—William B. Hite. GILBERT—Rufus Maurice Musick. MATEWAN—William Hansford Triplett. WILLIAMSON—James Ezra Hatfield; Harry Robinson Parker; Russell Arthur Salton; James Malachi Whittico.

Monongalia County

MORGANTOWN—Richard H. Edmondson; James William Hartigan; David Hott; Thomas Judson McBee; Harvey C. Powell; John Nathan Simpson; Washington Waters Stonestreet.

Monroe County

ALDERSON—Charles Francis Mahood.

Nicholas County

CRAIGSVILLE—Adlai E. Callaghan. RICHWOOD—Walter Fundenberg Leech. SUMMERVILLE—Herbert Clark Kincaid.

Ohio County

ELM GROVE—Reece Means Pedicord. WHEELING—Andrew Linn Coyle; Leech Key Cracraft; William Allen Cracraft Jr.; Lowell Sidney Goin; Eugene Augustus Hildreth; Wm. Eugene Masters; William Hay McLain; Emerson Megrail; Charles Menger Truschel; Ferdinand William Wiehe.

Pendleton County

FRANKLIN—George Price McCoy; UPPER TRACT—Charles Lloyd Moore.

Pleasants County

ST. MARY'S—Homer Willard Grimm.

Pocahontas County

MARLINTON—Norman R. Price. MINNEHAHA SPRINGS—Raymond B. Lockridge.

Preston County

MASONTOWN—Ernest Jacob Wichterman. RAWLESBURG—Foster Carmon Howard. TUNNELTON—Barrick Samuel Rankin.

Putnam County

HURRICANE—Grover Cleveland Roberson.

Raleigh County

AFFINITY—George Fordham. DOROTHY—Benjamin Lewis Pettry. PEMBERTON—Wm. Crocket Corey. RALEIGH—McRay C. Banks.

Randolph County

BEVERLY—William Glen Harper. ELKINS—Hoddie Wilbur Daniels; Charles Henry Laws; Harry Knight Owens. MILL CREEK—Bayard Lee Liggett.

BLOOMFIELD—Waitman W. Orr.

Ritchie County

ELLENBORO—Emmett Addis Corbin. HARRISVILLE—Gordie C. Patton; William Everett Whiteside. PENNSBORO—Latimer Porter Jones.

Roane County

ANIMA—Clyde Harper. SPENCER—Stephen W. Bull; Ross Dodson; John Ewell McQuain; Charles O. Staats. STERLING—Richard Lownsberry Eltings.

Summers County

HINTON—Maurice Clayton James; Harry Clay Lynch. PENCE SPRINGS—George Lewis Pence.

Taylor County

GRAFTON—Emmet Richelieu Bucklew; Dorsey C. Peck.

Tucker County

BEN BUSH—John Smyth Cayce; Charles Wesley Myers.

Tyler County

SISTERSVILLE—Ralph Homer Boice; Frederick Eugene Keller; Robt. Frederick Thaw.

Upshur County

BUCKHANNON—James A. Rusmisel.

Wayne County

WAYNE—John Richard Keesee.

Wetzel County

HUNDRED—Krank M. Kearns. SMITHFIELD—Chas. L. Bates.

Wood County

PARKERSBURG—Oliver D. Barker; Walter Scott Link.

Wyoming County

MULLENS—Byron William Steele.

STATE MEDICAL SOCIETY OF WISCONSIN

Officers 1917-18

G. Windersheim, President.................................Kenosha
Oscar Lotz, First Vice President.................................Milwaukee
T. W. Nazum, Second Vice President.................................Janesville
Carl Doege, Third Vice President.................................Marshfield
Rock Sleyster, Secretary.................................Waupun
S. S. Hall, Treasurer.................................Ripon

Councillor Districts and Officers

First District.—Dodge, Jefferson, Washington and Waukesha counties. M. R. Wilkinson, Councillor, Oconomowoc.

Second District.—Kenosha, Racine and Walworth counties. G. Windesheim, Councillor, Kenosha.

Third District.—Columbia, Dane, Green, Rock, Marquette and Sauk counties. F. T. Nye, Councillor, Beloit.

Fourth District.—Crawford, Grant, Iowa, Lafayette and Richland counties. Wilson Cunningham, Councillor, Platteville.

Fifth District.—Calumet, Fond du Lac, Manitowoc and Sheboygan counties. W. F. Zierath, Councillor, Sheboygan.

Sixth District.—Brown, Door, Kewaunee, Outagamie and Winnebago counties. H. W. Abraham, Councillor, Appleton.

Seventh District.—Buffalo, Jackson, Juneau, La Crosse, Monroe, Trempealeau and Vernon counties. Edward Evans, Councillor, La Crosse.

Eighth District.—Florence, Marinette, Oconto and Shawano counties. T. J. Redelings, Councillor, Marinette.

Ninth District.—Adams, Clark, Green, Lake, Lincoln, Marathon, Portage, Waupaca, Waushara and Wood counties. Jos. Smith, Councillor, Wausau.

Tenth District.—Barron, Burnett, Chippewa, Dunn, Eau Claire, Pepin, Pierce, Polk, Sawyer, St. Croix and Washburn counties. Rollo U. Cairns, Councillor, River Falls.

Eleventh District.—Ashland, Bayfield, Douglas, Forest, Iron, Langlade, Oneida, Price, Rusk, Taylor and Vilas counties. J. M. Dodd, Councillor, Ashland.

Twelfth District.—Milwaukee and Ozaukee counties. D. J. Hayes, Councillor, Milwaukee.

HONOR ROLL

Ashland County

ASHLAND—George W. Harrison; Carl O. Hertzman; Henry Arthur Sincock. BUTTERNUT—Albert August Axley.

Barron County

ALMENA—Edgar S. Christman. BARRON—Harry Marcus Coleman; Clark Crandall Post. PRAIRIE FARM—Hiram Allen Buell. RICE LAKE—Drexel Lowry Dawson; Edgar Jonas Knapp. TURTLE LAKE—William B. Cornwall.

Bayfield County

BAYFIELD—Franklin Marshall Hawley; Herman Gustave Mertens. WASHBURN—Parkes T. Trowbridge.

Brown County

DENMARK—Frank John Hager. GREEN BAY—Paul Mather Clifford; Robert Lewis Cowles; Donne Francis Gosin; Fabian Joseph Gosin; Herman Hendrickson; George F. King; Arthur James McCarey; John Edward McGinnis; Harry C. Mix; Walter E. Mueller; George Senn.

Buffalo County

GILMANTON—Arthur Dean Smith. MONDOVI—Milton Weston Hall; Earl L. Parmenter.

Burnett County

GRANTSBURG—Adolph Leonard Kyllo. SIREN—Lawrence H. Oliver. WEBSTER—George LeRoy Converse.

Calumet County

BRILLION—Keith Thomas Meyer. CHILTON—William Patrick Forkin; Donald George Hugo. FOREST JUNCTION—John Patrick Harkins. NEW HOLSTEIN—Alexander J. Berger.

Chippewa County

CHIPPEWA FALLS—Eugene P. Ellenson; Conrad William Wilkowske; George Mortimer Smith.

CORNELL—Henry Bush Beeson. HOLCOMBE—Royal Charles Rodecker. STANLEY—Hans C. Erickson.

Clark County

ABBOTSFORD—George Claude Devine. GREENWOOD—Frank Alfred Boeckmann; Frank Homer Kennedy. HUMBIRD—Samuel George Schwarz. OWEN—Sherman Merris Kyes.

Columbia County

PORTAGE—John E. Bentley; William Johnstone Thomson.

Crawford County

PRAIRIE DU CHIEN—Peter L. Scanlan.

Dane County

DEERFIELD—Merle H. Draper. MADISON—Smiley Blanton; Frank Favill Bowman; John Kendall Chorlog; James Philip Dean; Robert Drane; Carl A. S. Gunderson; Carl Samuel Harper; Herman Alfred Heise; William S. Middleton; Robert Clinton Montgomery; Norman Oscar Nelson; Ira Roscoe Sisk. MARSHALL—Clarke Bailey Devine. MENDOTA—William F. Lorenz. MIDDLETOWN—Martin Fred Du Frenne. STOUGHTON—Harry Anthony Keenan; Alfred Louis Olson. SUN PRAIRIE—William Ellsworth Allen; Howard Jerome Barry; Engelbert Theodore Krauss; John Edward Rueth.

Dodge County

BEAVER DAM—Leo Orrin Voorus; Enoch Palmer Webb. HORICON—Raymond Nicholas Nelson. LOMIRA—Leon Harry Flancher.

Door County

STURGEON BAY—Frederick Charles Huff.

Douglas County

SUPERIOR—Francis J. Broghammer; George Hall Conklin; William Edwin Ground; John Cornelius Kyllo; Walter Allan McEachern; Carl Jacob Rollefson; Charles B. Rydell; Richard Cecil Smith.

Dunn County

MENOMONIE—Anfin Egdall; Irving Van Vliet Grannis. RIDGELAND—Knute Albin Ruethin. WHEELER—Richard Albert Dreyer.

WISCONSIN

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.
Adams	684	136.8	8,604	1,720	5	..	1	3	3	..
Ashland	1,082	45.1	23,271	969	24	1	10	16	16	4
Barron	885	29.5	33,083	1,102	30	1	15	23	18	7
Bayfield	1,503	100.2	17,151	1,143	15	1	5	8	6	3
[1]Brown	529	9.9	59,747	1,127	53	1	31	47	35	12
Buffalo	687	62.4	16,006	1,455	11	..	5	9	8	3
Burnett	860	215.0	10,156	2,539	4	..	5	4	..	3
Calumet	324	18.5	16,701	923	17	..	12	16	12	5
Chippewa	1,039	35.6	37,642	1,107	34	3	16.	24	20	6
Clark	1,218	52.9	33,159	1,441	23	..	12	14	15	5
Columbia	778	19.4	31,135	778	40	2	13	25	23	2
Crawford	579	28.9	16,288	814	20	..	9	13	9	1
[2]Dane	1,202	8.1	83,275	559	149	15	83	111	104	21
Dodge	897	21.3	48,023	1,143	42	2	18	21	30	4
Door	469	33.5	19,534	1,394	14	..	7	9	11	1
[3]Douglas	1,337	27.8	55,515	1,156	48	2	27	34	38	8
Dunn	869	39.5	25,420	1,155	22	1	11	17	16	4
Eau Claire	638	16.8	33,472	880	38	2	17	27	24	5
Florence	497	497.0	3,515	3,515	1	..	1	1	..	1
Fond du Lac	726	9.5	54,545	737	74	1	43	57	60	12
Forest	1,400	116.7	10,713	891	12	..	5	9	8	4
Grant	1,164	22.4	39,099	751	52	2	29	38	42	11
Green	593	19.1	21,641	698	31	3	15	23	18	5
Green Lake	360	18.9	15,491	815	19	..	9	16	16	3
Iowa	781	30.0	22,497	137	26	..	15	19	12	2
Iron	792	132.0	9,539	1,589	6	1	5	5	4	..
Jackson	990	70.7	17,075	1,219	14	..	8	11	9	5
Jefferson	552	12.5	34,306	779	44	..	29	31	26	8
Juneau	802	42.2	19,569	1,029	19	..	6	15	10	2
[4]Kenosha	282	6.4	41,119	934	44	2	21	36	32	2
Kewanee	337	42.1	16,784	2,098	8	1	8	8	4	..
[5]La Crosse	481	8.6	44,724	798	56	3	30	40	34	9
Lafayette	624	27.1	20,075	884	23	4	11	17	16	..
Langlade	875	62.5	20,352	1,453	14	..	10	10	12	2
Lincoln	902	53.0	21,104	1,241	17	..	7	13	13	5
Manitowoc	602	14.3	46,960	1,118	42	1	24	31	34	6
Marathon	1,554	33.8	63,665	1,384	46	..	28	36	35	5
Marinette	1,415	56.6	35,994	1,435	25	3	11	21	20	2
Marquette	457	45.7	10,909	1,090	10	..	5	9	6	3
[6]Milwaukee	235	0.3	508,496	747	680	12	390	534	401	104
Monroe	937	42.6	29,448	1,338	22	..	13	15	19	7
Oconto	1,118	6.6	29,146	1,714	17	1	7	14	9	4
Oneida	901	60.1	13,300	886	15	..	7	11	9	2
Outagamie	646	11.3	51,185	897	57	2	30	51	38	10
Ozaukee	233	21.2	17,677	1,607	11	..	9	10	9	..
Pepin	236	47.2	7,577	1,515	5	..	2	3	4	..
Pierce	563	25.6	22,079	1,003	22	1	13	15	9	2
Polk	935	46.7	23,969	1,198	20	1	13	15	13	2
Portage	812	25.4	32,012	1,000	32	3	13	22	21	7
Price	1,279	79.3	17,217	1,076	16	1	8	13	8	3
[7]Racine	324	4.6	66,023	929	71	2	39	53	39	13
Richland	590	21.1	18,809	671	28	2	14	22	19	7
Rock	716	76.2	58,702	624	94	9	41	70	59	16
Rusk	925	92.5	13,086	1,308	10	..	7	8	7	1
Saint Croix	735	33.4	25,910	1,177	22	2	10	17	19	1
Sauk	842	22.1	32,869	864	38	2	25	27	17	4
Sawyer	1,320	220.0	8,150	1,358	6	..	3	5	3	2
Shawano	1,158	52.6	35,101	1,595	22	1	16	17	17	6
Sheboygan	521	7.4	58,204	843	69	..	35	56	52	8
Taylor	991	110.1	15,378	1,708	9	..	3	5	5	1
Trempealeau	748	29.9	22,928	917	25	1	14	21	19	7
Vernon	821	31.6	28,116	1,081	26	..	9	15	20	4
Vilas	833	138.8	6,813	1,135	6	..	3	3	1	..
Walworth	560	12.4	29,874	663	45	2	20	35	31	8
Washburn	835	119.3	10,147	1,449	7	..	5	5	5	1
Washington	431	12.4	23,926	825	29	..	18	24	21	8
Waukesha	549	9.1	38,464	641	60	4	28	49	48	15
Waupaca	759	19.5	33,633	862	39	1	13	27	27	4
Washara	646	49.7	21,012	1,616	13	..	8	9	8	4
[8]Winnebago	459	6.9	64,956	984	66	2	36	58	50	11
Wood	809	27.9	34,026	1,173	29	1	16	20	22	3
Totals	55,238	20.2	2,536,091	929	2,783	101	1,485	2,119	1,818	446

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1. Includes Green Bay, population 30,017; physicians 41 [M.R.C. 12].
2. Includes Madison, population 31,315; physicians 95 [M.R.C. 12].
3. Includes Superior, population 47,167; physicians 44 [M.R.C. 8].
4. Includes Kenosha, population 32,833; physicians 38 [M.R.C. 2].
5. Includes La Crosse, population 31,833; physicians 46 [M.R.C. 7].
6. Includes Milwaukee, population 445,008; physicians 625 [M.R.C. 81].
7. Includes Racine, population 47,465; physicians 53 [M.R.C. 11].
8. Includes Oshkosh, population 36,549; physicians 39 [M.R.C. 7].

Eau Claire County

EAU CLAIRE—Joseph Charles Baird; Leo Howard Flynn; Hiram Ansley Fulton; Edwin Patrick Hayes; John E. B. Ziegler.

Florence County

FLORENCE—Arthur Francis Lyon-Campbell.

Fond du Lac County

CAMPBELLSPORT—Leo Aloysius Hoffmann. FAIRWATER—Edmond Isaiah Moquin. FOND DU LAC—George Herbert Lawrence; Jonas R. Longley; Patrick Robert Minahan; George Herman Schlesselman. NORTH FOND DU LAC—Albert J. Pullen. RIPON—Edgar C. Barnes; John Samuel Foat. WAUPUN—L. Rock Sleyster; Lucius Lorin Taylor; Athol Horatio Wedge.

Forest County

CRANDON—Clark Ogden Decker. HILES—Henry Allen Halsey. LAONA—Roderick Stephen Elliott. WABENO—George Hamilton Reddick.

Grant County

BLOOMINGTON—James Edmund Heraty; Paul John Lewis. BOSCOBEL—Emil Albert Ruka; Frank Sylvester Tuffley. FENNIMORE—Ernest Clyde Howell. LANCASTER—Sam Wade Doolittle; James Harman Fowler. LIVINGSTON—Llewellyn Henry Treglown. MONTFORD—Homer Sylvester. PLATTEVILLE—Carlton Haworth Andrew; William W. Pretts.

Green County

BRODHEAD—George Switzer Darby; Ezra Jay Mitchell; Lee Ballou Rowe. MONROE—Lewis A. Moore.

BRODHEAD—Anthany Joseph Looze.

Green Lake County

BERLIN—Burt Edward Scott. PRINCETON—Alexander Aloysius Drill; Wade H. Fortner.

Iowa County

MINERAL POINT—Homer Dexter Ludden. RIDGEWAY—Delzie R. Lee.

Jackson County

ALMA CENTER—Charles Muson Griswold; George White Griswold; Robert Lee MacCormack. BLACK RIVER FALLS—Harold Kalling. TAYLOR—Neal Samuel Simons.

Jefferson County

FORT ATKINSON—Louis Jerome Bennett; William Thaw Clark. JEFFERSON—Jay C. Brewer. LAKE MILLS—Gustave Elmer Eck. WATERTOWN—Theodore Carl Henry Abelman; Robert Emmett Wm. Bowen; George Edward Lindow; Albert Fredk. Wm. Ottow.

Juneau County

ELROY—James William Doughty; Carl Christian Vogel.

Kenosha County

KENOSHA—John Russell Eastman; Howard Messner Ripley.

LaCrosse County

BANGOR—Charles Allan Yates. CHETEK—John Howard Prill. LA CROSSE—William A. Edwards; Robert H. Gray; Victor Clarence Jacobson; Albert A. Maurer; Herman Charles Meyer; George Robert Reay; Eugene Herbert Townsend Jr.

Langlade County

ANTIGO—Edwin R. F. Murphy; Lyman Allen Steffen.

Lincoln County

GLEASON—William Henry Bayer. MERRILL—Erling Oscar Rayn; Herbert Bittner Saylor. TOMAHAWK—George R. Boker; Louis M. Pearson.

Manitowoc County

MANITOWOC—William Edward Donahue; Adolph J. Shimek; Max Staehle. REEDSVILLE—Edwin Garfield Festerling. TWO RIVERS—Albert M. Farrell; Eugene Gates.

Marathon County

MOSINEE—George Ellis Towle. STRATFORD—Clinton Orlando Fuller. WAUSAU—Jesse R. Bryant; Eugene Edwin Flemming; Merritt LaCount Jones.

Marinette County

MARINETTE—John William Boren; Russell Rulo Heim.

Marquette County

ENDEAVOR—John Edward Simpson. MONTELLO—Edwin Henry Federman. PACKWAUKEE—Harry Edwin Gillette.

Milwaukee County

MILWAUKEE—John Edwin Armitage; Leonard Joseph Bachinski; Gerhard A. Bading; William Waldo Bauer; Earl Lucas Baum; Emil Frederick Baur; John M. Beffel; Elias Bibby; Nelson Miles Black; Robert W. Blumenthal; Max Bornstein; Jeffrey Jabez Brook Jr.; George Van Ingen Brown; Robert Curtis Brown; Dirk Bruins; Harry Eugene Bundy.

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George W. Neilson; James David Nelson; Edward Nicholas Pfeffer; Harry Bernard Podlasky; George Richard Randall; George Gary Rieckhoff; Philip Fletcher Rogers.

Harry C. Saltztein; Frank J. Schubert; Abraham Bernard Schwartz; Stanley Joseph Seeger; Gilbert E. Seaman; George Maurice Segal; Ulrich Senn; John Raymond Sheehan; Allen Walters Sivyer; Eugene Albert Smith; John William Smith; Hubert Spencer Steenberg; Charles Engels Stolz; Emil Henry Sutter.

James Gurney Taylor; Edward Lewis Tharinger; Francis Alexander Thompson; Michael J. Trock; George Gustave Wallschlaeger; William Frederick Weingart; Claude Isaac Wheatley; Richard Shelby Wilson; John Lawrence Yates. MISHICOT—Arthur Frederick Stueck. NATIONAL HOME—Vernon Roberts. SOUTH MILWAUKEE—Edward Purdon Evans. WAUWATOSA—Glenford L. Bellis; John Francis Bennett; Eugene Alfred Gatterdam; Otis Wm. C. Maercklein; Charles Dyer Martin; Russell Edwin Olsen; Harry W. Sargent; Orlando P. Schoofs. WEST ALLIS—Thos. Willett.

MILWAUKEE—Henry John Kuhn; Gerald A. Sullivan; Herbert Frederick Wolters.

WAUWATOSA—Herbert Carl Dallwig.

Monroe County

CATARACT—Raymond Arthur Hebron. NORWALK—Judson S. Allen; Clifton Abel Cooper. SPARTA—Carlton M. Beebe; John M. Scantleton. TOMAH—Albert Raymond Bell; Arthur Edward Winter.

Oconto County

OCONTO—Thomas Clarke; Clifford Joseph Ouellette; William C. Watkins. OCONTO FALLS—George W. Krahn.

Oneida County

RHINELANDER—Clarence Alfred Richards; Irving E. Schiek

Outagamie County

APPLETON—William J. Frawley; Earl Francis McGrath; William Nelson Moore; James R. Scott. BLACK CREEK—Frank Clinton Walch. HORTONVILLE—Frank Oscar Brunckhorst. ONEIDA—Josiah A. Powless. SEYMOUR—Wesley L. Boyden. SOUTH KAUKAUNA—Argo Melbourne Foster; Benjamin Franklin Hoyt.

Pierce County

ELLSWORTH—Leon Grant Smith. RIVER FALLS—Adelor Eugene Gendron.

Polk County

AMERY—Gentz Perry. ST. CROIX FALLS—Henry Clay Caldwell.

Portage County

ROSHOLT—Carl Christenson Birkelo. STEVENS POINT—John Wesley Bird; Lyman Alden Copps; Wayne Frost Cowan; Vincent Joseph Shippy; Robert Borden Smiley; Frank Amenzo Walters.

Price County

OGEMA—Charles Magnus Pearson. PARK FALLS—Ole Andy Nelson; Edwin Almiron Riley.

Racine County

BURLINGTON—Charles Henry Meyst. FRANKSVILLE—Arthur Floyd Fritchen. RACINE—George Nelson Brazeau; Charles Anthony Cibelius; James George Conley; John Thomas Corr; William Christian Hanson; John Hughes Hogan; William W. Johnston; Frank Waldemar Pope; William P. Salbreiter; Carl Otto Schaefer; Luther Nelson Schnetz.

Richland County

CAZENOVIA—Wm. Raymond Doctor; George Henry Schlenker. EXCELSIOR—Ivan Beauford Pippin. RICHLAND CENTER—Roy Fred Breedon; Percival Guardian Lasche; Harry Charles McCarthy; Harry Holroyd Ainsworth.

Rock County

BELOIT—Benjamin Fosse; William Hecker; Harold McMurdo Helm; Ernest Louis Henning. CLINTON—Charles Harwood Dodge; Albert Smith Parker. EVANSVILLE—Clarence Sylvester Cook. JANESVILLE—Charles Perry Clarke; George Waterman Fifield; Vincent William Koch; Wayne Alonzo Munn; Walter Thomas Nuzum; John Frank Pember; Floyd Eugene Shearer; Thomas Joseph Snodgrass; Frank Walter Vankirk.

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Sheboygan County

PLYMOUTH—Ralph Kaysen. SHEBOYGAN—Harold Albert Bachmann; Edward J. Barrett; Edgar W. Bedford; Otho A. Fiedler. SHEBOYGAN FALLS—Robert Moses Nichols; Edward Charles Pfeifer. *SHEBOYGAN—Clarence Nicholas Sonnenburg.*

St. Croix County

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Taylor County

MEDFORD—Edgar B. Elvis.

Trempealeau County

ARCADIA—Oliver O. Nelson; Judson Albert Palmer. BLAIR—Charles D. Kelly. INDEPENDENCE—Albert Herbert Kulig. OSSEO—Marlin C. Crane. WHITEHALL—Sylvester E. Hutchins; James Clarence Tyvand.

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MINONG—John Thomas Brooks.

Washington County

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Waupaca County

FREMONT—Charles Frederick Rehling. NEW LONDON—August Ludwig C. Borchardt. OGDENSBURG—John Carter Johnson. WAUPACA—Clifford W. Andrews.

Waushara County

HANCOCK—William Alonzo Joseph; Martin John Treichler. PLAINFIELD—Frank B. Borden.

Whitman County

LA CROSSE—George Frank Andrew.

Winnebago County

NEENAH—Clarence C. Del Marcelle; Frank Horatio Russell. OSHKOSH—Burton Clark; Clarenden James Combs; John Mayo Conley; William David Harvie; Charles H. Nims; Addison John Provost; John Ferdinand Schneider. WINNEBAGO—Charles Corwin Rowley. WINNECONNE—Charles W. Hughes.

Wood County

GRAND RAPIDS—Will G. Merrill; Frank X. Pomianville. MILLADORE—Conrad M. Meyer.

WYOMING STATE MEDICAL SOCIETY

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WYOMING

County	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Comms'd in M.R.C., etc.
Albany	4,401	366.7	8,191	682	12	..	6	7	6	3
Bighorn	6,768	423.0	6,815	425	16	3	9	12	11	..
[1]Campbell	....	....	2,376	594	4	..	2	3	..	..
Carbon	8,029	573.5	8,412	600	14	..	6	12	7	..
Converse	6,740	1,123.3	3,626	604	6	..	4	5	5	..
Crook	5,441	1,088.2	5,117	1,023	5	..	3	4	3	..
Fremont	12,659	....	9,633	566	17	1	11	14	11	2
[1]Goshen	....	....	5,035	1,258	4	2	2	2	1	..
[1]Hot Springs	....	....	3,191	290	11	..	7	10	7	2
Johnson	4,175	744.6	3,238	539	6	..	4	6	1	1
Laramie	6,992	218.5	14,631	460	32	3	22	24	15	5
[1]Lincoln	....	....	13,581	754	18	..	15	16	4	4
Natrona	5,353	334.6	5,398	337	16	1	10	12	12	1
[1]Niobrara	....	....	3,488	697	5	..	3	5	2	..
Park	5,220	401.5	5,473	421	13	..	7	10	10	..
[1]Platte	....	....	5,277	439	12	..	..	7	5	..
Sheridan	2,575	83.1	15,439	498	31	2	22	26	24	4
Sweetwater	10,500	700.0	10,612	709	15	1	10	11	6	1
Uinta	11,011	1,101.1	6,051	605	10	1	5	6	5	..
[1]Washakie	....	....	1,744	581	3	..	1	3	2	..
Weston	4,593	1,148.2	4,411	1,103	4	..	3	4	1	1
Totals	91,490	372.0	141,705	557	254	11	152	199	138	24

1. Counties recently organized; area included with that of other counties.

HONOR ROLL

Albany County

LARAMIE—Arthur E. Lane; Durward Belmont Park; Edward M. Turner.

Crook County

MOORCROFT—Edward Thomas Gaule.

Fremont County

LANDER—William Francis Smith.

Hot Springs County

CROSBY—Allan Mowry Giddings. GEBO—David Albert Williams.

Johnson County

KAYCEE—Luther Ebert Mitchell.

Laramie County

CHEYENNE—Clyde Yooger Beard; Harry L. Goff; Frederick J. Peirce; Otto Kerr Snyder. FT. D. A. RUSSELL—Ziba Lindley Henry.

Lincoln County

DIAMONDVILLE—Earle Raymond Van Cott. KEMMERRER—Wilson Fullenwider McDill; Robert Hyle Sanders; Walter Addison Whitlock.

Natrona County

CASPER—Niel Charles Geis.

Sheridan County

DAYTON—James Thomas McBride. DIETZ—Edward Ray Schunk. SHERIDAN—Harold M. Brown; Adelbert Harold Benson.

Sweetwater County

ROCK SPRINGS—Oliver Chambers.

Weston County

NEW CASTLE—Fred L. Horton.

SUMMARY OF STATE TABLES*

STATE	Area, Square Miles	Sq. Miles per Physician	Population Est. 1917	Population per Phys.	Total No. Physicians	Total Women Phys.	Physicians Under 45	Physicians Under 55	Members of Co. Society	Commis'd in M.R.C., etc.	Percentage of Physicians Who Hold Commissions
Alabama	51,279	20.3	2,307,304	913	2,525	5	1,568	2,016	1,706	330	13.1
Arizona	97,395	294.2	263,788	797	331	9	211	274	189	76	23.0
Arkansas	52,525	20.3	1,776,475	687	2,587	18	1,282	1,849	887	202	7.8
California	155,652	28.8	3,038,322	563	5,396	446.	2,956	3,698	2,736	728	13.5
Colorado	119,785	70.9	1,014,178	600	1,689	99	739	1,164	841	185	10.9
Connecticut	4,820	2.8	1,334,864	795	1,679	63	948	1,299	1,055	261	15.5
Delaware	1,965	7.7	234,819	924	254	5	120	172	103	32	12.6
District of Columbia	60	0.05	369,282	300	1,230	64	817	951	641	216	17.6
Florida	59,396	46.2	1,031,372	803	1,283	29	738	998	568	213	16.6
Georgia	60,610	17.3	2,875,205	837	3,436	17	1,956	2,757	1,551	432	12.6
Idaho	83,303	185.5	448,577	999	449	9	262	366	156	70	15.6
Illinois	56,043	5.1	6,265,789	574	10,909	596	5,530	8,151	6,213	1,533	14.0
Indiana	36,045	7.5	2,914,193	611	4,763	135	2,106	3,109	2,591	529	11.1
Iowa	55,587	13.9	2,476,526	618	4,004	107	1,775	3,156	2,595	454	11.3
Kansas	81,774	30.6	1,888,868	707	2,668	51	1,345	1,904	1,491	382	14.3
Kentucky	40,664	11.7	2,425,466	696	3,483	63	1,801	2,587	1,983	454	13.0
Louisiana	48,613	24.0	1,864,534	920	2,025	24	1,259	1,760	1,002	281	13.9
Maine	28,895	24.5	794,216	673	1,179	27	544	833	805	164	13.9
Maryland	9,641	4.2	1,409,415	621	2,268	71	1,269	1,727	1,088	403	17.8
Massachusetts	8,039	1.36	3,929,784	669	5,870	403	3,410	4,325	3,403	791	13.5
Michigan	57,480	12.5	3,458,185	752	4,598	185	1,844	3,434	2,810	665	14.5
Minnesota	80,856	31.7	2,286,341	884	2,584	57	1,454	1,992	1,621	416	16.1
Mississippi	46,825	23.7	1,994,685	1.009	1,975	15	1,231	1,527	985	260	13.2
Missouri	68,664	11.3	3,537,819	583	6,063	156	2,956	4,375	3,136	699	11.5
Montana	240,150	363.3	472,987	715	661	24	439	560	328	121	18.3
Nebraska	75,533	48.3	1,295,896	828	1,565	64	1,020	1,557	1,173	312	19.9
Nevada	116,941	769.3	111,284	732	152	4	82	123	86	31	20.4
New Hampshire	9,031	13.3	445,613	677	657	37	270	456	502	92	14.0
New Jersey	7,514	2.5	3,119,558	1,024	3,046	147	1,747	2,489	1,721	518	17.0
New Mexico	108,940	238.9	349,920	767	456	8	242	363	224	60	13.1
New York	47,661	-3.0	9,321,431	587	15,877	619	8,552	12,255	8,324	2,583	16.3
North Carolina	49,370	22.1	2,433,782	1,087	2,237	21	1,251	1,706	1,284	340	15.2
North Dakota	73,525	121.7	664,607	1,100	604	7	429	540	408	100	16.5
Ohio	40,750	5.2	5,261,587	673	7,821	218	3,626	5,699	4,758	1,001	12.8
Oklahoma	70,069	26.6	2,315,180	866	2,672	47	1,366	2,001	1,432	377	11.1
Oregon	97,757	86.8	862,239	764	1,128	80	591	901	562	203	18.0
Pennsylvania	44,831	3.9	8,783,728	761	11,539	518	6,180	8,324	6,750	2,022	17.5
Rhode Island	1,067	1.4	631,505	832	759	22	419	623	408	106	14.0
South Carolina	31,115	25.1	1,616,615	1,331	1,237	9	680	950	692	204	16.5
South Dakota	80,246	124.4	597,331	924	646	16	335	513	372	92	14.2
Tennessee	53,282	15.3	2,238,729	646	3,481	20	1,733	2,235	1,660	444	12.7
Texas	259,862	41.6	4,557,957	730	6,236	74	2,871	4,039	3,731	788	12.6
Utah	82,184	172.3	444,746	932	477	17	298	417	260	75	15.7
Vermont	9,129	14.2	368,260	576	639	11	288	453	377	86	13.4
Virginia	40,262	16.0	2,023,600	806	2,509	37	1,411	1,551	1,971	394	15.7
Washington	66,836	39.9	1,558,808	956	1,673	72	899	1,334	974	284	17.0
West Virginia	24,024	13.7	1,420,151	807	1,759	23	994	1,394	1,070	213	12.1
Wisconsin	55,238	20.2	2,536,091	911	2,783	101	1,485	2,119	1,818	446	16.0
Wyoming	94,490	372.0	141,705	557	254	14	152	190	128	24	9.4
Totals	3,085,823	21.4	106,543,317	739	144,116	4,864	75,498	107,255	81,239	19,692	13.7

The fifth column shows 144,116 physicians in the United States. These figures are taken from the galley proofs of the new edition of the American Medical Directory, still in process of compilation, and do not include officers of the Medical Corps of the Army or Navy. It is estimated that the new directory will show a slight increase over the preceding one, or 145,000.

The population is based on the 1917 estimate made by the Bureau of the Census for use in connection with the Selective Service.

The tenth column gives 19,692 as the number of physicians who have been commissioned. As stated in the introductory, these figures do not include those who have been offered commissions but who have not yet accepted them, or whose acceptances have not been reported to this office. Neither, of course, does it include those whose applications are pending. We estimate the total of these two classes at about 2,000.

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* See Editorial "The Honor Roll," this issue.

Arthur Dean Bevan

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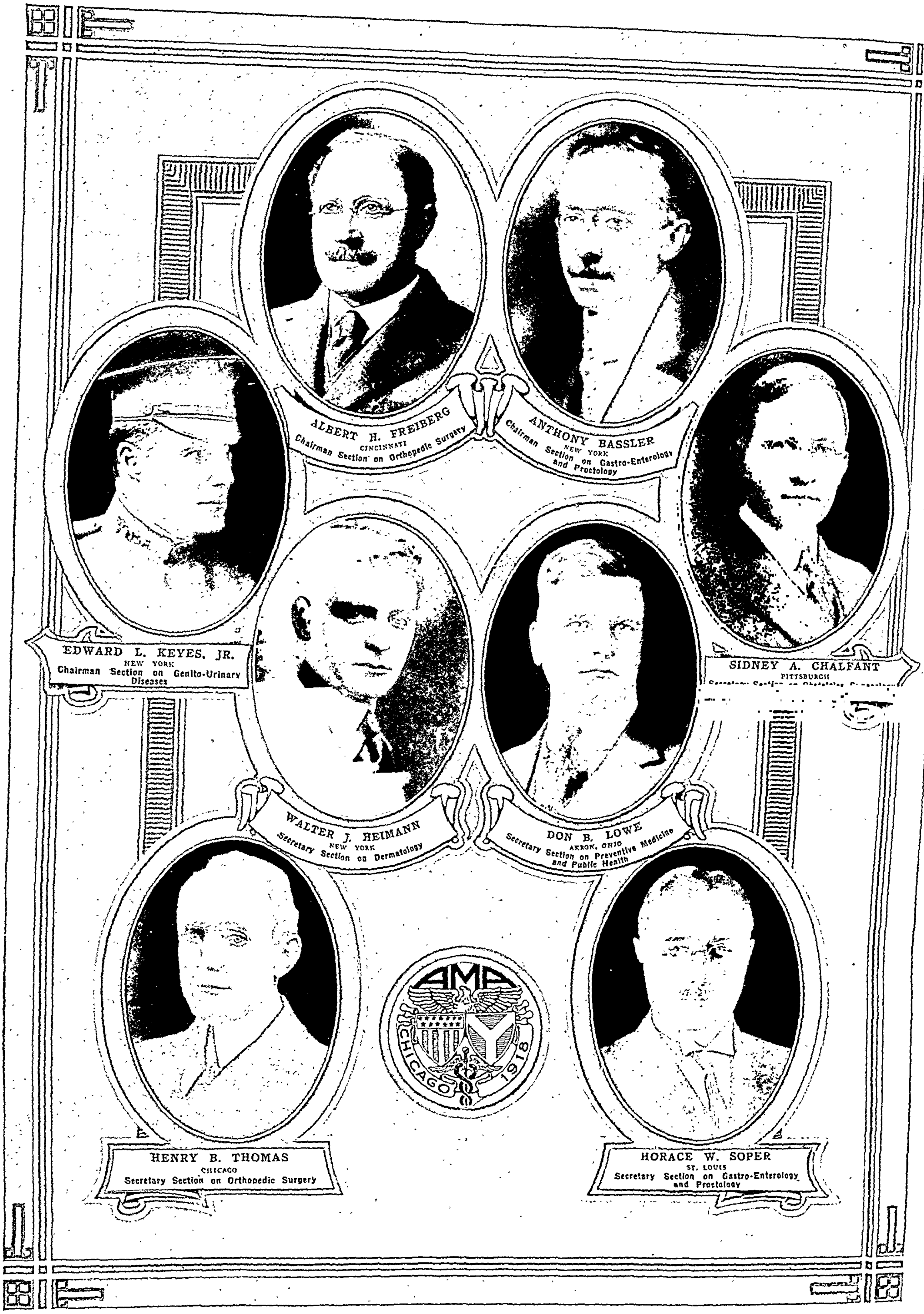
SOME OF THE SECTION OFFICERS—1918



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American Medical Association

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THE EFFECT OF PHOSPHORUS ON GROWING, NORMAL AND DISEASED BONES *

D. B. PHEMISTER, M.D.
CHICAGO

Since the experimental work of Wegner[1] in 1872, showing the effect of phosphorus on growing bones in animals, it has been used more or less extensively as a therapeutic agent in disorders of ossification. Almost no postmortem or other evidence, however, has been offered as to the exact changes which it brings about in the bones of man.

Wegner administered 1/400 grain of yellow phosphorus daily to young growing dogs, cats and chickens over considerable periods of time, and observed definite changes which in case of the long bones may be thus summarized: There was increased new bone formation in the diaphysis which was especially marked along the epiphyseal lines, leading to the formation of a dense layer in the ends of the shaft which varied in thickness with the length of the period of phosphorus administration. When the period was short, the zone of dense bone was narrow; but when prolonged, it was broad and in some instances included almost all of the trabeculated portion of the ends of the shaft. The cortex of the shaft was increased in thickness from both periosteal and endosteal new bone formation, but the change was not as striking as that in the end of the shaft except in the case of the chicken, in which the medullary cavity of the shaft was practically obliterated and the bones greatly increased in weight. Changes were also observed in the epiphyses. A dense narrow line of new bone formed about the periphery of each center of ossification. Adult bones were not affected by the administration of phosphorus. He found similar slight changes in a child with atrophic but otherwise normal bones which had received small doses of phosphorus during the two months previous to its death. The bones of three children dying of rickets which had been treated with phosphorus were studied and somewhat similar changes found in one of them. He was skeptical about the value of phosphorus in rickets which was regarded as a condition in which the power of depositing lime salts has been lost by the bony tissues. In this event the phosphorus would stimulate the still further formation of osteoid tissue, which would, however, remain unossified during the florid stage of the disease. Wegner also produced fractures and found that phosphorus stimulated the formation and ossification of callus, but he gives no instance of its use in delayed or nonunion in man.

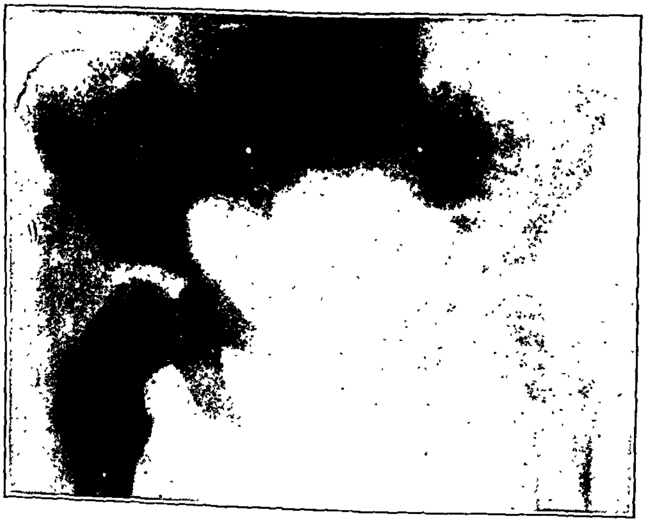
Fig. 1 (Case 1).—Perthes' disease of right hip before beginning administration of phosphorus.

Red phosphorus and phosphorus compounds, except large doses of calcium phosphate, produced no effects.

Kassowitz[2] repeated and confirmed Wegner's experiments and brought out the additional fact that from two to four times the dose of phosphorus that produces osteosclerosis leads to osteoporosis and the typical picture of experimental rickets. He used phosphorus extensively in rickets with good clinical results.

Kissel[3] experimented with phosphorus, and concluded that it produced no general changes in the bones; but he apparently used ten times the dose employed by Wegner, which explains the difference in results. Miwa and Stoeltzner[4] were also able to confirm the finding of Wegner in a few of their experiments, and Stoeltzner as a result of extensive clinical experience has been a firm advocate of phosphorus therapy in rickets.

Cod liver oil was used in the treatment of rickets before the introduction of phosphorus, and later the two substances were combined. Many regarded it largely as a convenient vehicle for the phosphorus and without any special therapeutic value. However, more recent studies in the calcium metabolism of healthy and rachitic children have tended to reverse this opinion.

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* From the Department of Surgery, Rush Medical College.

[1] Wegner: Virchows Arch. f. path. Anat., 1872, 55, 9.

[2] Kassowitz: Ztschr. f. klin. Med., 1884, 7.

[3] Kissel: Virchows Arch. f. path. Anat., 1896, 144.

[4] Miwa and Stoeltzner: Jahrb. f. Kinderh., 1898, 57.

Schabad,[5] in a series of articles, has maintained that phosphorus when administered alone in the usual therapeutic doses causes no increase in calcium accumulation in the body, and in some of the cases studied even accelerated its elimination. Cod liver oil alone causes a moderate increase, while cod liver oil and phosphorus cause a marked increase in the calcium accumulation. Lime salts, especially calcium lactate when given with cod liver oil and phosphorus, increase still further the calcium accumulation. Where the action is favorable there is not only an increased retention of the calcium intake, but a relative diminution in the calcium output both by the stools and by the urine. He concludes that the cod liver oil, not the phosphorus, is the primary active substance, and that the phosphorus acts secondarily by augmenting the accumulation that is started by the oil. Somewhat similar studies have been made by Schloss,[6] which tend to support these views.

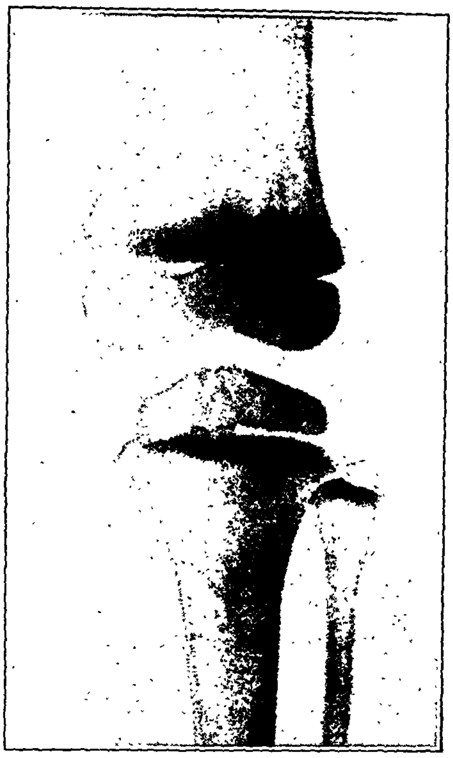

Fig. 2

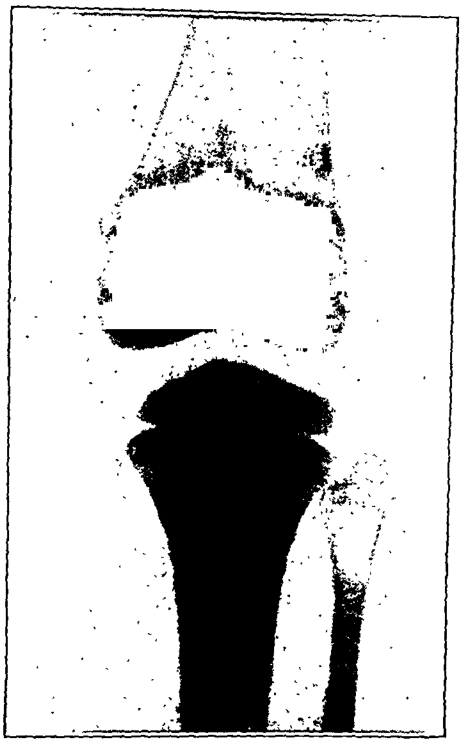

Fig. 3

Fig. 2 (Case 1).—Right knee eight months after beginning treatment with phosphorus. Note heavy, broad shadow in the end of the shaft of each bone.

Fig. 3 (Case 1).—Four months after discontinuing phosphorus. Growth has continued; an unexpected finding is that a second line has formed in the immediate zone of growth along the epiphyseal cartilage which is of about the same density and thickness as the first.

As 98 per cent. of the calcium of the body is stored up in the bones, they should show a variation in calcium content in case of an increase or decrease in the amount retained in the body. This can be determined either by studies at necropsy or by roentgen studies of the bones in the living. No evidence of either kind is offered by Schabad or Schloss in support of their claims. Consequently the roentgenographic studies of the following cases in which phosphorus alone was administered are of interest.

Case 1.—A. P., aged 4, was first seen in November, 1915, with the typical picture of Perthes' disease of the right hip of six months' standing (Fig. 1). The joint was immobilized for three months by a plaster-of-Paris cast, and phosphorus, 1/200 grain, was given three times a day, in order to determine its effect on the diseased epiphysis of the head of the femur. Roentgen-ray studies were also made of other regions in order to study the effects on the normal bones. The phosphorus was continued for eight months, at which time Figure 2 was taken of the right knee. It shows a heavy, broad shadow in the end of the shaft of each bone, being broadest in the femur where the longitudinal growth is greatest. The cortices of the shafts do not appear to be thickened. The epiphyses of all three bones show a fairly dense narrow shadow about the periphery of the centers of ossification. The drug was then stopped, and Figure 3 shows the condition four months later. Growth has continued, and the epiphyses have thereby been carried beyond the lines in the ends of the shafts, which lines are also narrower and less dense than in Figure 2. An unlooked for finding is that a second line has formed in the immediate zone of growth along the epiphyseal cartilage which is of about the same density and thickness as the first. The epiphyses show a second shadow of a layer of new bone outside of the dense layer formed during the period of phosphorus administration. This is best seen on the epiphysis of the fibula, and the sides of the epiphysis of the femur.

Roentgenograms at the end of another four months (Fig. 4) show the same two sets of lines in the ends of the shafts and epiphysis; but they are much fainter, narrower and more widely separated than at the previous examination. The phosphorus was then administered for five weeks, and seven and one-half months later roentgenograms were again taken (Fig. 5). Three faint lines are now visible in the *ends* of the shafts about the knee; one deep in the shaft from the

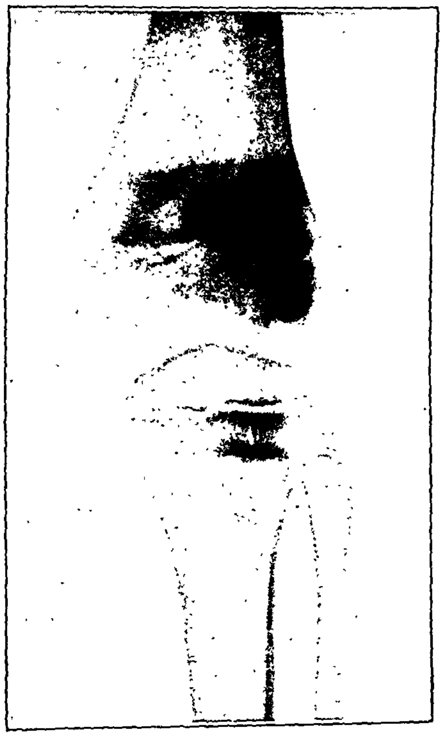

Fig. 4

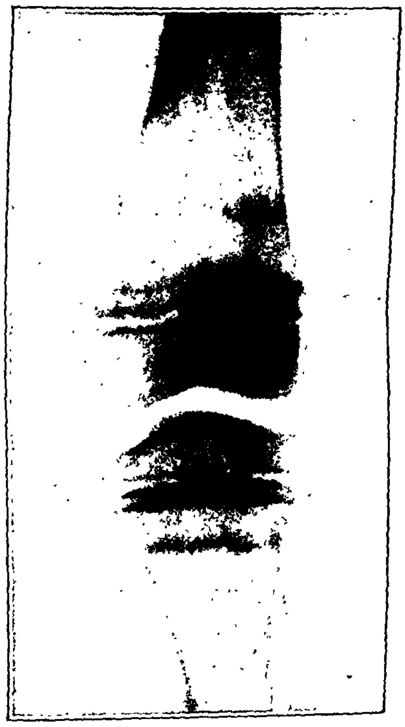

Fig. 5

Fig. 4 (Case 1).—Four months after Figure 3 was taken. Of special interest in Figures 4 *and* 5 *is* the evidence of continued bone formation in the end of the shaft over a prolonged period after the phosphorus had been stopped.

Fig. 5 (Case 1).—Seven and one-half months after Figure 3 was taken.

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5. Schabad: Ztschr. f. klin. Med., 1909, **57**, 454; *1909*, **58**, *94*; 1910, **59**, 435; Jahrb. f. Kinderh., *1910*, **72**, 1.

6. Schloss: Jahrb. f. Kinderh., 1915, **82**, 435; 1916, **83**, 46; Monatschr. f. Kinderh., 1914, **13**, 291.

first administration, a second near the epiphysis from the second administration, and a third in the recent zone of growth along the epiphyseal cartilage. The inner line formed in the epiphyses from the first administration is still faintly visible, but no middle or outer dense lines are seen. The same changes were found on roentgen examination of the ends of other long bones.

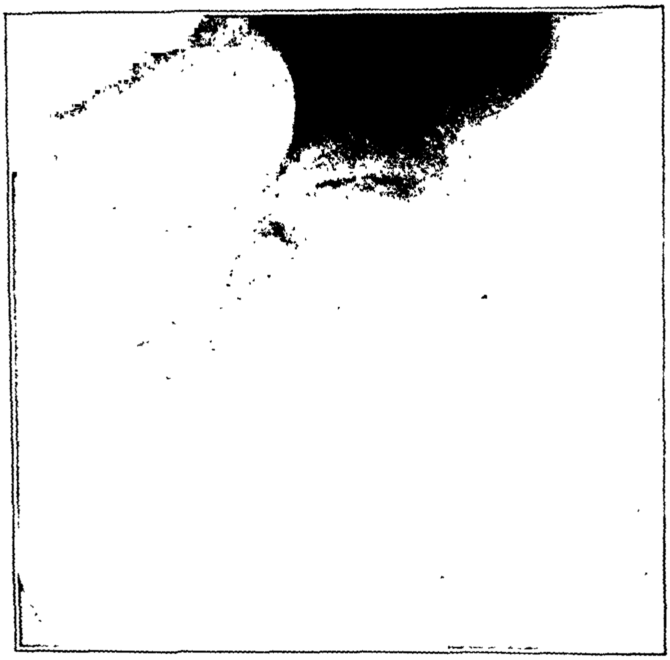

Fig. 6 (Case 1).—Affected hip two and one-half years after onset of disease. Phosphorus appears to have had little influence on the course of the disease.

The cause of the continued, although less marked dense bone formation in the end of the shaft along the epiphyseal line, over a prolonged period of time after the phosphorus had been stopped is problematical, but the following two factors are to be considered: First, that phosphorus may be retained in the body and exerts a cumulative action, and second, that the excessive calcium salts stored up in the form of bone in the immediate vicinity may act as a stimulus and cause the dense bone formation. In favor of the former is the observation of Schabad's that wherever there was calcium accumulation there was also an increase in phosphorus retention. Such accumulation is, however, in the form of phosphates, and there is no evidence of the storing up of the element phosphorus as such in the body. In favor of the latter there are no anatomic or roentgen-ray observations; but the metabolic studies of Stoeltzner and Etienne show that moderate doses of calcium salts cause both a relative and an absolute increase in the amount of calcium retained. It is possible that the excessive lime salts stored up in the form of bone, which are constantly being liberated, act as a stimulus and lead to the dense new bone formation in the zones of growth. This may explain the manner of action of calcium phosphate as observed by Wegner.

It is of interest to note that the phosphorus apparently had no influence on the course of the disease for which it was given. The epiphysis gradually broke down until it was eventually almost completely destroyed and the neck was greatly deformed. Active symptoms subsided after about twelve months, leaving the hip joint markedly stiffened, and Figure 6 shows the condition two and one-half years after the onset. Meager results were to be expected, as Perthes' disease is in all probability an epiphysitis of bacterial origin, and as the phosphorus has little influence on the slowly ossifying normal epiphysis.

A second case shows the influence of phosphorus on a marked disturbance of the longitudinal growth of the shafts of the bones of one limb, and on the normal bones of the other limbs:

Case 2.—G. C., boy, aged 7½ years, entered the Presbyterian Hospital, July 18, 1915, with dyschondroplasia (Ollier) of the left lower limb. He had limped since the second year, and the left limb, which was otherwise strong and free from symptoms, had gradually grown much shorter than the right. An operation involving bone transplantation for supposed bone cyst had been performed on the upper end of the femur one year before, with infection, and a resulting fistula that had not healed. The patient was a well developed, healthy boy except for the left lower extremity, which was 3½ inches shorter than the right. Both thigh and leg were involved in the shortness, but the foot was almost free, as it was only slightly smaller than the right. The musculature of the limb was well developed, and all the movements were normal. There was a discharging fistula 3 inches beneath the greater trochanter. The ends of the shortened shafts of the femur, tibia and fibula were slightly enlarged and uneven. Roentgen examination of the ends of the bones revealed the epiphyses approximately normal, but the ends of the shafts for a distance of 2 to 3 inches beyond the epiphyseal lines were expanded and cast very faint shadows, which were streaked by irregular longitudinal lines and dotted irregularly by uneven shadows. This change was most marked in the lower ends of the femur (Fig. 7) and tibia. The upper end of the femur showed a coxa vara with a broadened neck casting a faint shadow and the outline of the necrotic transplant below in the irregular but dense shaft which had been formed about it.

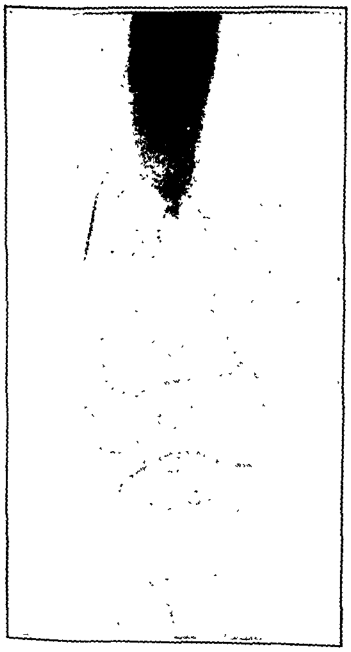

Fig. 7

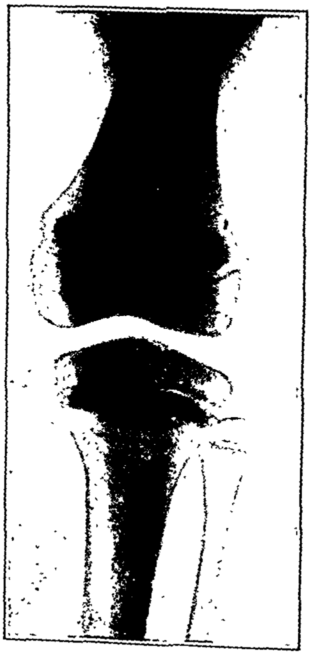

Fig. 8

Fig. 7 (Case 2).—Dyschondroplasia (Ollier). Note the irregular longitudinal lines and the irregular uneven shadows in the lower end of the femur and tibia particularly.

Fig. 8 (Case 2).—Effect of prolonged administration of phosphorus on dyschondroplasic bone.

The infected transplant was removed, and at the same time for diagnostic purposes a strip was excised the entire length of the diseased area of the lower end of the shaft of the tibia. It showed that the end of the shaft was filled with a mass of hyaline cartilage with only a thin streaked bony cortex about the periphery, and islands of calcification with beginning ossification were scattered irregularly throughout, making the dotted shadows in the roentgenograms. The condition arises from a dysplasia of the epiphyseal cartilage leading to a piling up of cartilage or an enchondromatous condition in the ends of the shafts and usually affects the bones of one or two extremities. It was decided to try the effects of phosphorus on the diseased condition; so after the hip wound had healed, the patient was given $\frac{1}{200}$ grain in pill form twice daily for three months. Roentgenoscopy revealed moderate changes similar to those in Figure 2 of the preceding case and also including the ends of the affected bones of the left limb. The phosphorus was discontinued for twenty-six months, at which time the only remaining effects of its administration, as shown by the roentgen ray, were the narrow, feeble, transverse shadows in the ends of the shafts at considerable distances from the epiphyseal lines. One hundredth grain pills were then given twice daily and continued fairly regularly for eight months, at which time roentgenograms were again taken.

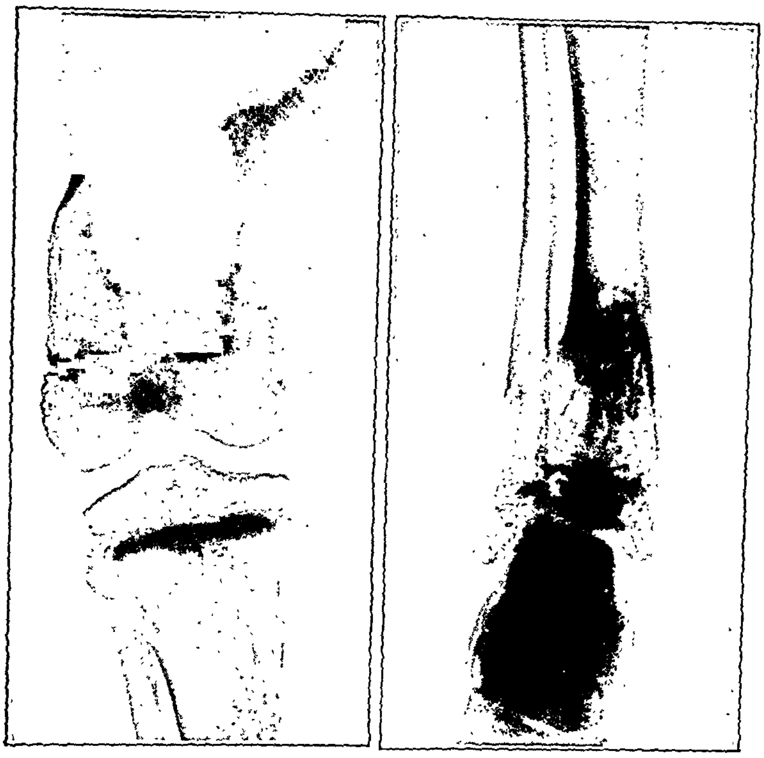
Fig. 9 Fig. 10

Figs. 9 and 10 (Case 2).—Effect of prolonged administration of phosphorus on dyschondroplasic bone.

Figure 8 shows the effect in the normal right limb, where the broad, heavy shadows of the shaft ends represent the bone formation from the recent administration. The narrow line some distance away in the end of the tibia is from the previous administration; but no traces of it are to be seen in the end of the femur or in the epiphyses. In the left limb (Fig. 9) there are no traces left of the first administration except a very faint line seen in the upper end of the tibial shaft.

From the second administration there are zones along the epiphyseal lines and marked enlargement of the irregular spots in the diseased ends of the shafts. The upper end of the tibia where the disease is not marked shows an even broad line, but the lower end of the femur, where the changes are extensive, casts a very irregular juxta-epiphyseal shadow. In its mesial portion there has been little growth along the epiphyseal line, which has produced some bowing of the leg; but the shadows representing numerous islands of the zone of calcification carried upward in the cartilaginous mass have markedly enlarged. This is due no doubt to ossification in and about them and not to a growth of the islands of calcification. The changes are especially well shown in the lower ends of the tibia and fibula, where shadows are seen in the epiphyses from growth about included islands of calcified cartilage (Fig. 10). The transverse growth of the shafts, including the diseased regions, has continued, as seen by comparing Figure 7 with Figure 9, which was made two and one-half years later; but there is little evidence of the influence of the phosphorus on it.

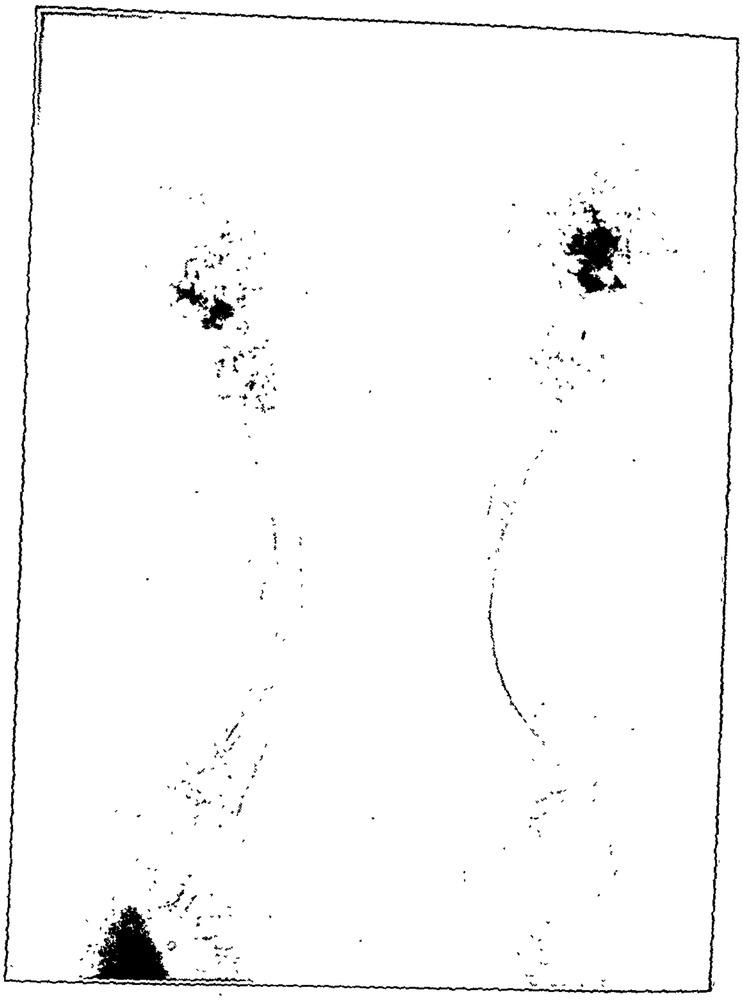
Fig. 11 (Case 3).—Limb bones in osteogenesis imperfecta. The shafts are relatively narrow, and the cortices are very thin.

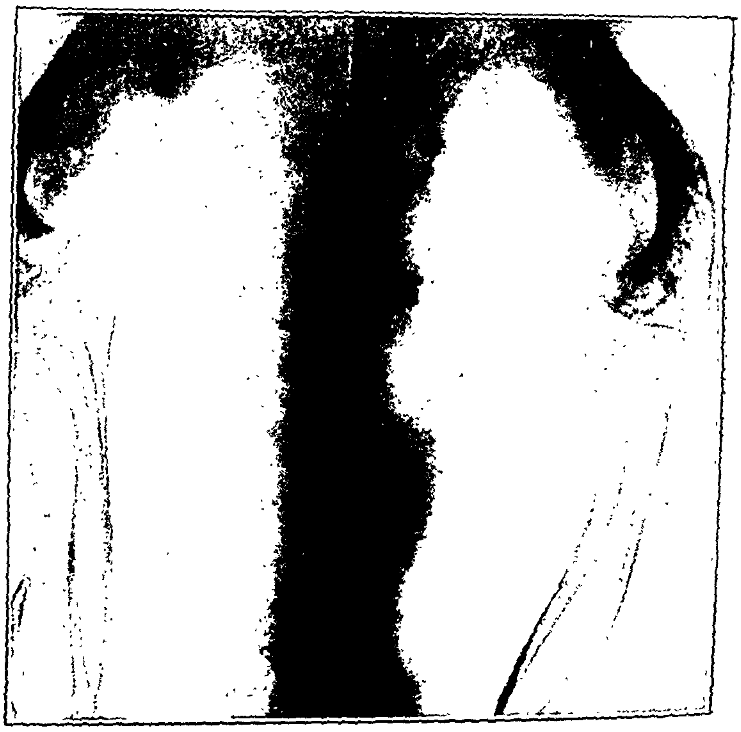
Fig. 12 (Case 3).—Limb bones in osteogenesis imperfecta. The shafts are relatively narrow, and the cortices are very thin.

It is doubtful if the effect of the phosphorus has been of any value to the patient, as there has been no relative increase in the length of the affected limb. It is conceivable, however, that the prolonged use of phosphorus in enchondromas showing areas of calcified cartilage might eventually lead to their complete ossification.

The following case shows the marked effect of phosphorus on both the longitudinal and transverse growth, where a congenital disturbance of bone growth was present:

Case 3.—W. N., boy, aged 8, was first seen in May, 1913, presenting the usual picture of osteogenesis imperfecta. He weighed only 25 pounds and had suffered numerous fractures of the bones of the frail extremities since birth which, coupled with a hyposcoliosis, had resulted in marked deformity. He was unable to stand and showed about the mental development of a 4 year old child. Roentgenograms of the limb bones (Figs. 11 and 12)) revealed fairly long but very narrow shafts, the cortices of which were very thin. As a result of the fractures there were marked curvatures and remnants of several old calluses. The epiphyses were relatively large, and their centers of ossification had appeared normally. Epiphyseal lines were distinct except in the lower ends of the femora, where, as a result of injury, they had become obliterated, resulting in marked shortening of the shafts, especially the right one (Fig. 19).

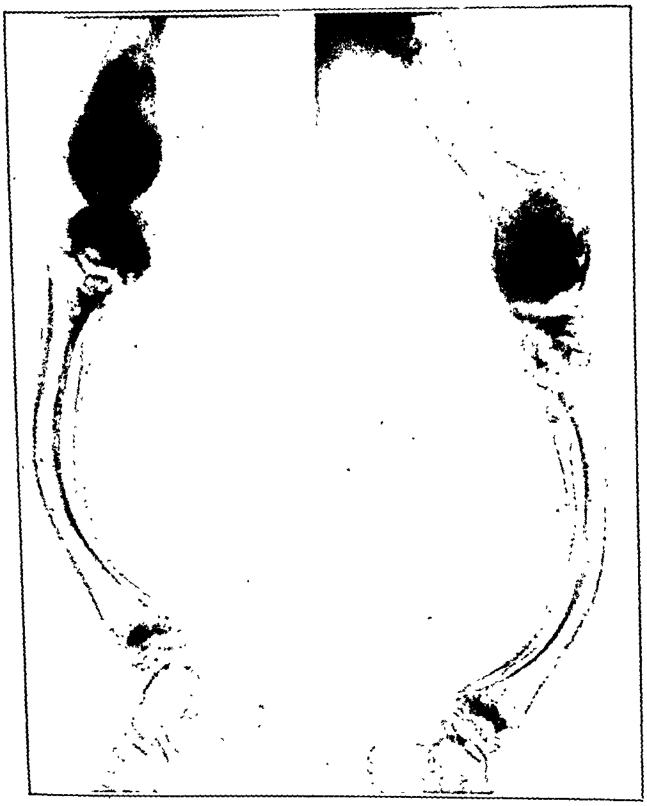

Fig. 13 (Case 3).—This and the following illustrations show the bone changes following prolonged administration of phosphorus in a case of osteogenesis imperfecta. There has been marked stimulation of osteogenesis which has led to transverse growth of the shafts—the process chiefly affected in the disorder—as well as to longitudinal growth and growth of the epiphyses. In this illustration, marked transverse growth of the tibiae and fibulae is shown, with no signs of recent fractures.

The patient was put on phosphorus pills, 1/200 grain, three times a day, which were continued quite regularly for twenty-six months, when he was again seen. There had been considerable general improvement and a gain in weight of 5 pounds. He was now able to sit, and used the arms more freely, which had resulted in a number of bone injuries during the periods. Roentgenoscopy revealed marked phosphorus changes. There were shadows at the ends of the shafts varying in density and breadth according to the normal rate of longitudinal growth for the region, marked increase in the transverse diameters of the shafts and denser shadows about the cortex of the centers of ossification in the epiphyses and in the short bones of the hands and feet and of the patellae. The tibiae and the fibulae (Fig. 13) showed marked transverse growth with no signs of recent fractures. The broad dense shadows at the lower ends of the shafts showed the preponderance of growth in this region. There were no shadows in the lower metaphyses of the femora, owing to the absence of longitudinal growth from obliteration of their epiphyseal lines. There were marked changes in the upper extremities (Fig. 14), where shadows from the longitudinal

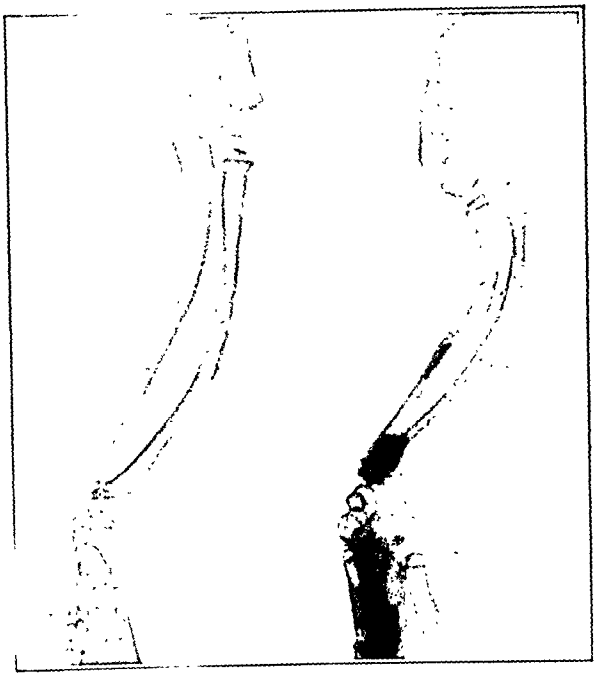

Fig. 14 (Case 3).—Marked changes in the upper extremities.

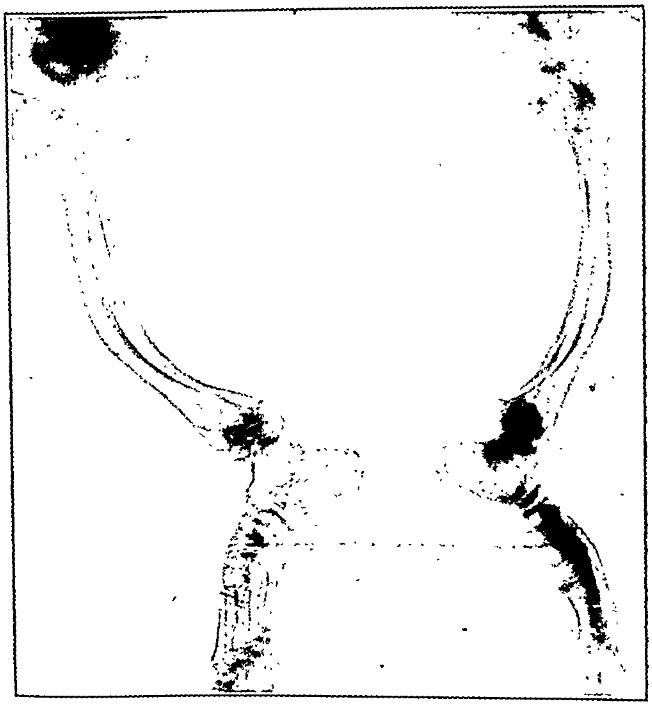

Fig. 15 (Case 3).—Fading of the shadows in the ends of the shafts, and absence of dense shadows in the zones of continued growth.

growth were broadest in the lower metaphyses of the radius and ulna. The transverse diameters were greater in the bones of the right arm. This was no doubt due to disuse of the left arm, resulting from fractures, two of which had occurred in the humerus and one in the radius and ulna, those of the humerus being not yet fully united.

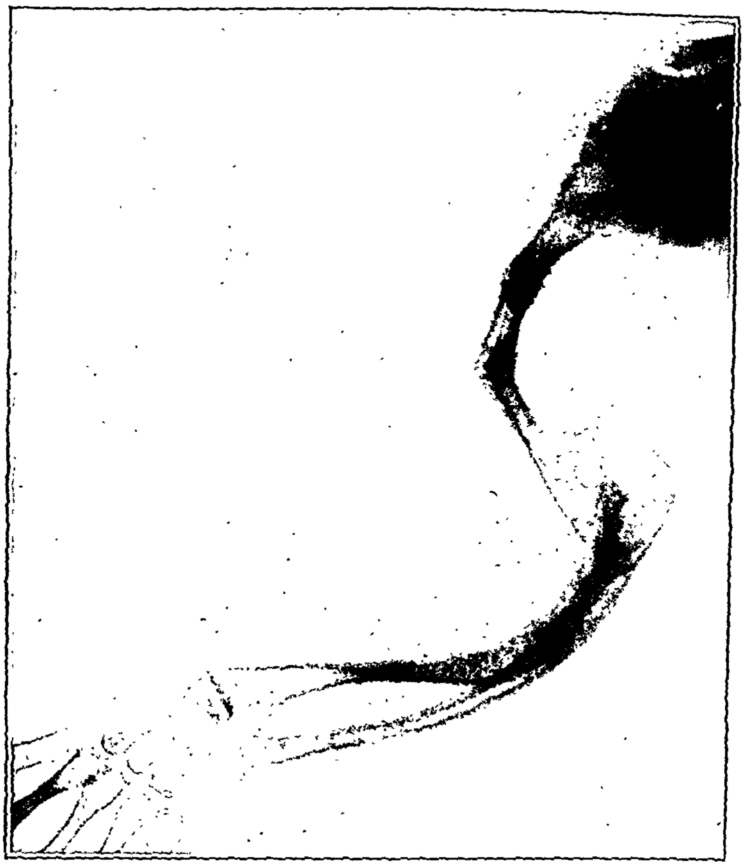

Fig. 16 (Case 3).—Left humerus, showing the two fractures with greater angulation and broader unossified intermediary calluses.

The dose of the drug was then changed to 1/150 grain twice daily, but the mother stopped giving it after about three months. The child was next seen one year later. Roentgenoscopy revealed marked fading of the shadows in the ends of the shafts (Figs. 15 and 16) as shown in previous plates, and no dense shadows formed in the zones of continued growth. The diameter of the shafts and thickness of the cortices had remained about the same. Inner markings from the previous administration were seen in some of the epiphyses and short bones of the hands and feet. The left humerus (Fig. 16) showed the two fractures with greater angulation and broader unossified intermediary calluses than in the previous plate. During the nine months that the phosphorus was discontinued there was more rapid absorption of the previously deposited bone than occurred during like intervals from healthy bones of the first two cases reported.

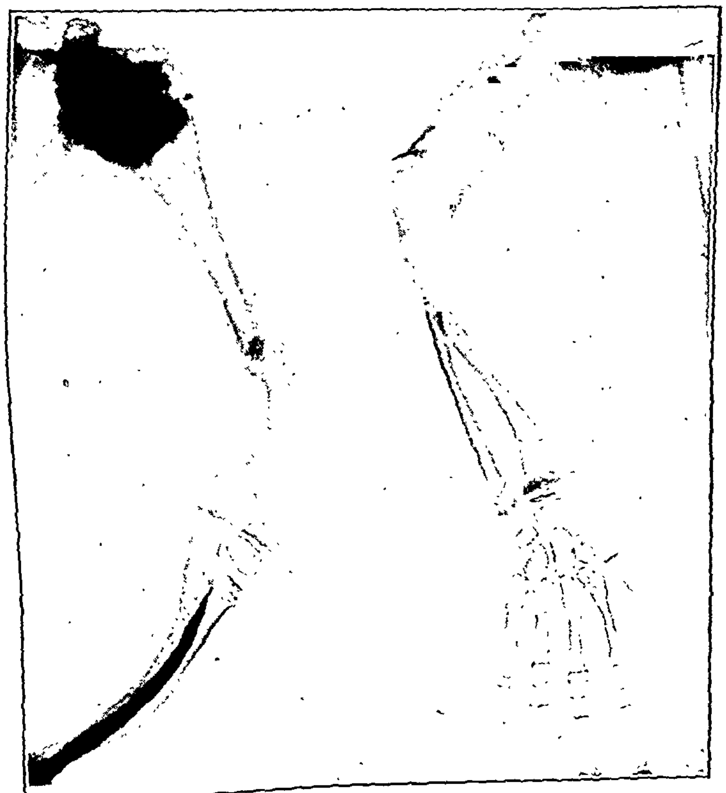

Fig. 17 (Case 3).—Phosphorus changes less extensive than in the first period.

The patient was again put on 1/150 grain of phosphorus twice daily, which was continued for eighteen months, when he was again examined. He was much more active both physically and mentally and could creep about, but was still unable to walk. He weighed 35 pounds, which was a gain of 10 pounds during the four and one-half years that he had been under observation. His mental development had been rapid, and he was doing third grade work in school. The deformity of the left arm had increased, and it was much less serviceable than the right. Six months before he had fractured the right arm, which was treated by a splint with healing. Roentgenograms were again taken, which showed phosphorus changes in the previously mentioned locations; but they were relatively less extensive than for the first period (Figs. 17 and 18). This was doubtless due to the smallness of the dose for his weight and age. The right humerus was relatively large and showed a bony callus at the seat of the fracture. The shaft of the left humerus was small, and the lower fracture shown in the previous plate was still ununited. The upper one had united, and its callus had almost entirely disappeared. In the picture of the pelvis and thighs (Fig. 19), the effects of the different administrations are especially well shown by the lamellae on the crests of the ilia. The dose of phosphorus was increased to 1/100 grain twice daily. Care must be exercised when it is used over such long periods of time in order to avoid the development of chronic phosphorus poisoning, in which, according to Wegner, there is necrosis of the parenchyma and subsequent fibrosis with contraction of the liver and kidneys, and to a less extent of other organs.

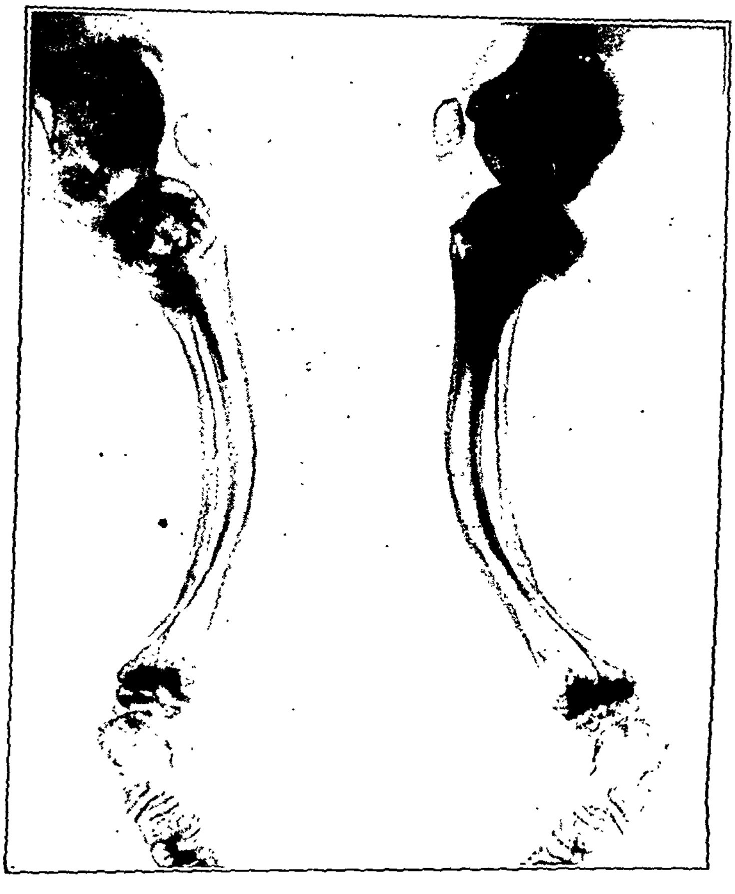

Fig. 18 (Case 3).—Phosphorus changes less extensive than in the first period.

The therapeutic value of phosphorus in this case is unquestioned. While it has not removed the underlying cause, osteogenesis has been markedly stimulated, both in the fibrous and enchondral processes of bone formation. This has led to transverse growth of the shafts, which process is chiefly affected in the disorder, as well as to longitudinal growth and growth of the epiphyses.

These findings show that phosphorus affects the normal bones of children in much the same way as described by Wegner for experimental animals. The effects on enchondral bone growth is especially well marked. No definite increased transverse growth could be made out, but if slight it would easily escape detection by means of the roentgen ray, especially as the technic varied with each set of plates. Also for some time after the phosphorus is stopped there is a continued but less marked overproduction of bone in the juxta-epiphyseal region of the shaft which is probably due either to the cumulative effect of phosphorus or to the stimulating influence of the excessive stores of calcium salts in the neighboring bone.

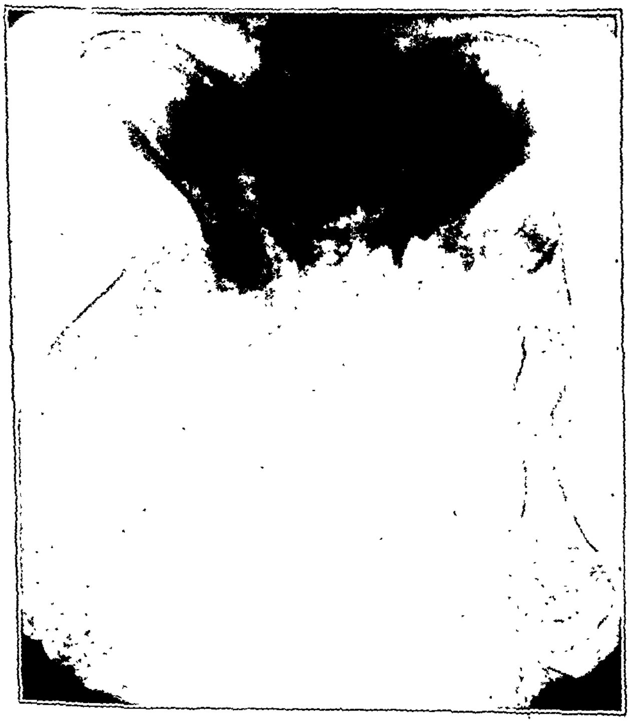

Fig. 19 (Case 3).—Effects in the pelvis and thighs.

COMMENT

The diseased bones showed certain variations. In osteogenesis imperfecta, the transverse growth was as strikingly affected as the *longitudinal*. All fractures occurring during the period of observation healed except one at the middle of the left humerus, which occurred during the period of interruption of the phosphorus, an inactive stage of nonunion being established before renewal of the drug. Judging from the general effect it produces, phosphorus if given early in fractures during the active period of repair should stimulate callus formation and ossification. In nonunion, however, when the natural reparative impulses have been exhausted, little should be expected from its use.

Roentgen-ray studies of the bones during the administration of phosphorus alone and with other substances in rickets should be of interest. These observations show clearly that phosphorus when given alone has a marked stimulating effect on bone production and consequently of calcium accumulation in the normal zones of growth, and speak against the assertions of Schabad relative to calcium metabolism in healthy children.

During the florid stage of rickets, the bony tissues have lost the power of depositing lime salts; and as phosphorus is presumably unable to restore this power, no appreciable effect from its administration would be detectable by means of the roentgen ray, although it may increase the amount of osteoid tissue formed. During the healing stage, when the power of laying down lime salts begins to return, the phosphorus would stimulate the formation of osteoid tissue and consequently increase the amount of bony tissue formed. It must be remembered that during the healing stage of rickets, from the rapid ossification of osteoid tissue piled up in the metaphysis during the florid stage, a condition forms which roentgenologically resembles very much the phosphorus changes in normal bones.[7] Phosphorus administration would intensify this condition.

122 South Michigan Avenue.

A CONSIDERATION OF SOME DRIED VEGETABLES

WITH SPECIAL REFERENCE TO THEIR NITROGEN AND CALCIUM CONTENT *

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From an economic standpoint it is highly desirable, particularly at this time when the transportation of foods occasions unusual difficulties, to eliminate as much water as possible from them and thus reduce their weight and bulk. This furnishes the justification for the attempt to use desiccated foods. Any propaganda for the widespread use of foods prepared in novel ways ought to be supported by scientific evidence of its importance from a physiologic standpoint.

For arctic explorations a supply of vegetables is considered desirable. In some expeditions this has been obtained by the use of desiccated green foods. During the Civil War such dried vegetables as were available were used. At present the various governments are using desiccated foods. The United States Food Administration has directed much effort during the past year in impressing on the minds of the people the value of drying foods. Farmers in this country years ago started drying such products as string beans. A successful community drying plant is no longer an experiment but an institution.[1] The drying of fruit likewise received attention from the Department of Agriculture years ago.[2] The possibilities of conservation by desiccation are obvious.

In considering the value of a food today, its inorganic constituents should receive attention as well as its protein, fat, carbohydrate and vitamin content. Years ago, Bunge[3] and other physiologists emphasized especially the physiologic importance of the mineral content of foods. The significant rôle which the inorganic constituents of foods may play has of late been demonstrated experimentally in more than one way, notably through the study of synthetic dietaries in which one or more inorganic elements were lacking or present in unsuitable proportions.[4]

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[7] Lovett, R. W.: The Roentgenographic Appearances in Rickets, The Journal A. M. A., Dec. 11, 1915, p. 2062.

* From the Sheffield Laboratory of Physiological Chemistry, Yale University.

[1] Farmer's Bulletin 916, U. S. Dept. Agr., 1917.

[2] Yearbook U. S. Dept. Agr., 1912, p. 505.

[3] Bunge, G.: Lehrbuch der physiologischen Chemie, Leipzig, 1897.

Sherman's[5] determinations of the inorganic constituents of a great many foods and also his compilations of recorded analyses are of unusual value to all students of nutrition. He in particular and later Blatherwick[6] have called attention to the significance of the acid and base forming constituents of foods. Forbes[7] has analyzed the ash of a great many foods, but most of his data relate to animal feeds.

Recently Courtney, Fales and Bartlett[8] reported statistics of the inorganic constituents of a number of vegetables subjected to definite conditions of cooking. These authors were particularly interested in determining to what extent cooking by different methods removed the available inorganic components of the foods, bearing in mind the use of green vegetables for their iron and calcium content in infant nutrition.

The student of dietetics recognizes that were it not for the use of milk, eggs and a few green vegetables, our food intake would ordinarily be very deficient in available lime. The present study was planned to supplement our somewhat meager knowledge regarding the composition of desiccated vegetables.

METHODS OF DRYING

Carrots and potatoes were peeled, care being taken not to contaminate the freshly cut surfaces with dirt; they were then weighed, sliced thin, and dried. All other vegetables were handled in an edible form; that is, inedible portions were removed, and the remainder washed thoroughly in cold running water to remove all traces of adherent soil. All vegetables were either dried on a piece of cheesecloth or in a small sieve on an ordinary steam-heated radiator at from 65 to 70 C. (149 to 158 F.).

At the temperature here used in drying, it is wise not to keep those vegetables containing much starch and sugar on the radiators longer than from two to three days, because they then begin to darken. The loss of water in producing these air-dried products was estimated as given in the table.

ANALYTIC PROCEDURES

The moisture still remaining in the air-dried products was determined by drying for from four to five hours in an oven at from 96 to 97 C. (204.8 to 206.6 F.). This temperature in some instances caused a slight darkening; but after many trials at different temperatures, it seemed the best to adopt as a working basis for this analytic procedure.

Ash was determined in the ordinary way on the air-dried material; nitrogen by Kjeldahl's method likewise, and calcium by McCrudden's[9] method. Before the calcium was determined, the ash was always taken down to dryness on the water bath from three to five times with hydrochloric acid to cause the traces of silica to flock out for removal.

THE LOSS OF WATER IN DRYING

The water content of vegetables is so variable that we only report figures on the basis of the solids found after drying as described. Values for raw edible portions mean nothing when the possibilities for a plant to lose water are so many. For example, variations in water content of a green vegetable may be due to the soil, weather at the time of harvesting, manner of shipment, manner of "handling" by the various dealers, period of time from harvest to consumption, and many other conditions.

NITROGEN

The nitrogen content of the dried vegetables is at best only a rough index of their content of protein. The increase in the concentration of protein as the result of drying is most striking; for example, the nitrogen content estimated on the basis of raw sweet potato is 0.3 per cent.; on the dried product it is 1.06 per cent.; in raw spinach it is 0.45 per cent.; in the dried, 4.58 per cent.

PERCENTAGE COMPOSITION OF VEGETABLES, ARRANGED ACCORDING TO DECREASING NITROGEN CONTENT

Name	Materials as Purchased		Air-Dried Material				
	Water	Solids	Moisture	Ash	N	Ca	Ca in % of Ash
Swiss chard*......	....	....	4.8	15.2	5.42	1.26	8.3
Beans of String Beans III.......	80.0	20.0	1.14	5.37	4.98	0.30	5.6
Spinach II........	90.2	9.8	3.7	15.9	4.58	0.56	3.5
Beet tops.........	94.2	5.8	2.3	18.1	4.35	1.66	9.2
Lettuce...........	96.4	3.6	4.22	10.5	4.01	0.77	7.3
String Beans II...	92.8	7.2	6.3	6.8	3.60	0.60	8.8
Spinach I.........	82.0	18.0	4.7	10.1	3.53	0.60	6.0
String Beans I....	90.4	9.6	5.8	6.9	3.47	0.53	7.7
Pods of String Beans III.......	93.0	7.0	3.56	5.8	3.09	0.87	15.0
Cabbage II.......	85.0	15.0	6.2	6.0	3.01	0.38	6.3
Celery............	97.3	2.1	2.27	16.5	2.99	1.13	6.8
Cabbage I........	89.4	10.6	4.5	4.75	2.86	0.55	11.6
Cabbage III......	87.3	12.7	6.3	5.5	2.85	0.36	6.6
Potato............	79.4	20.6	1.89	3.7	2.13	0.03	0.8
Carrot tops.......	74.9	25.1	4.1	10.3	1.95	2.14	20.8
"Riced" potato**	....	....	6.43	2.7	1.58	0.01	0.4
Carrots II........	82.2	17.8	7.6	4.2	1.39	0.22	5.2
Carrots I.........	83.5	16.5	5.3	3.7	1.19	0.19	5.2
Carrots III.......	84.2	15.8	5.9	3.95	1.16	0.20	5.1
Sweet potato.....	71.7	28.3	0.9	3.1	1.06	0.12	3.9

* *Product of the Mrs. O. H. Harriman Laboratory, New York.*

** *Prepared by Dr. H. C. Gore, Bureau of Chemistry, U. S. Department of Agriculture.*

The variation in nitrogen according to the plant or parts of the plant is striking. The starch plants, as potatoes and carrots, notwithstanding a high solid content on drying, have a low protein content. Spinach, Swiss chard, lettuce, celery and cabbage serving as vehicles of roughage and flavor, with a high water content, contain a relatively high percentage of nitrogen in the dried material. Intermediate between these two groups stands the string bean, in which the protein is concentrated ten times or more by drying.

In addition to the variation in nitrogen content according to the plant, there is a noticeable difference in the amount of nitrogen in the different parts of the same plant. Dried Carrots I had a nitrogen content of 1.19 per cent., while the tops from these carrots contained 1.95 per cent. According to a calculation from the tables of Atwater and Bryant,[10] the solids of beets contain 2.04 per cent. of nitrogen, whereas the sample of dried beet tops here analyzed contained 4.35 per cent. In the case of String Beans III, the nitrogen value of the beans was 4.98 per cent., while of the pods it was 3.09 per cent. In other words, the dietetically unimportant or waste parts of some vegetables contain almost as much nitrogen as, and in some cases more than, the important part of the vegetable, that is, for human consumption.

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[4] Osborne, T. B., and Mendel, L. B.: *Publication* 156, Carnegie Institution of Washington, 1911; Jour. Biol. Chem., 1918, **34**, 131.

[5] Sherman, H. C.: Chemistry of Food and Nutrition, Ed. 2, New York, the Macmillan Company, 1918.

[6] Blatherwick, N. R.: The Specific Rôle of Foods in Relation to the Composition of the Urine, Arch. Int. Med., September, 1914, p. 409.

[7] Forbes, E. B.; Beegle, F. M., and Mensching, J. E.: Bull. 255, Ohio Agr. Exper. Station, 1913.

[8] Courtney, Angelia M.; Fales, Helen L., and Bartlett, Frederic H.: Some Analyses of Vegetables Showing the Effect of the Method of Cooking, Am. Jour. Dis. Child., July, 1917, p. 34.

[9] McCrudden, F. H.: Jour. Biol. Chem., 1911-1912, **10**, 187.

[10] Atwater, W. O., and Bryant, A. P.: Bull. 28, O. E. S., U. S. Dept. Agr., 1906.

Notwithstanding these apparently high nitrogen values of some dried foods, it is doubtful whether they are significant from the standpoint of protein intake. Unless we alter our mode of cooking or resort to the use of dried material, it is hardly probable that an individual on his ordinary mixed diet would consume at one meal, in addition to other food, more than from 100 to 200 gm. of the cooked edible portion of any of the vegetables. However, it is not beyond the realm of possibility to dry and comminute the vegetable so finely that one could easily cook the dried material in half of its original water content. In fact, we have cooked our dried carrots in an amount of water equivalent to that driven off from them during the drying process, and have subsequently concentrated the mixture to a palatable consistency. This would have been impossible if the same vegetables had been cooked in their original form.

INORGANIC CONSTITUENTS

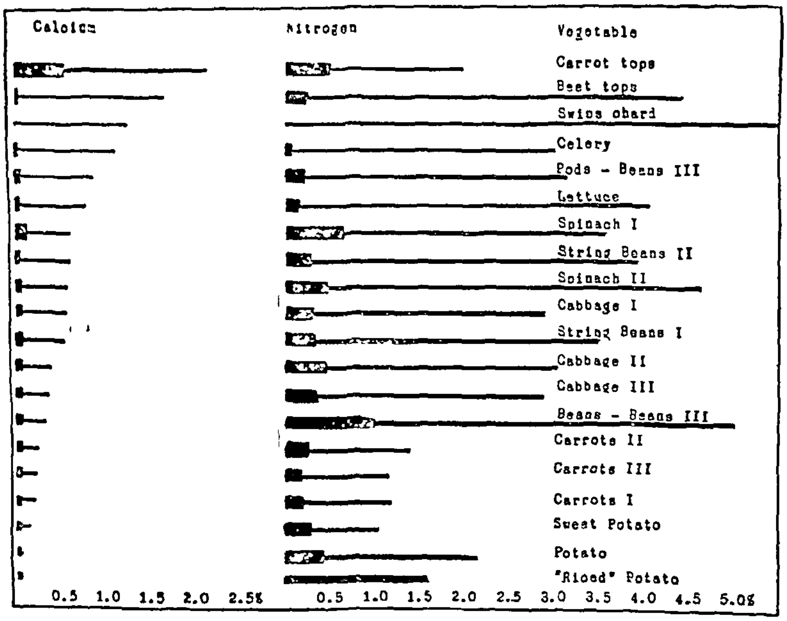
A glance at the table shows that a high percentage of inorganic constituents is characteristic of the green vegetables. This statement applies likewise to the calcium content. This alone, if there were no other reasons, would warrant a consideration of these materials as adjuvants to the dietary of the growing individual. We noted by comparative qualitative tests that the green foods had a preponderance of iron over the other vegetables. Their value as a source of iron cannot be overlooked when it is remembered that a quart of milk, one of the most valuable foods, contains only 1 or 2 mg. of this element. The last column of the table shows the calcium in percentage of the total inorganic content of the vegetables.

LOSSES BY COOKING AND DRYING

Attention is called to the possible loss of inorganic elements in the method of cooking vegetables. Snyder[11] studied the loss in cooking potatoes, carrots and cabbage under various conditions. Using ordinary methods of cooking, he showed that there was a decided loss in the inorganic constituents, as well as other components, in some instances as much as 50 per cent. Wardall[12] has estimated the loss in carbohydrates in preparing "thrice washed" vegetables for diabetics. Most recently Courtney, Fales and Bartlett called attention to the loss in minerals, by boiling, in preparing vegetables for children. They recommend the steaming of foods.

As is shown in the table, the "riced" potato contained a smaller amount of inorganic components, particularly calcium, than the other potato. This may be due either to the soil in which they were grown or to the method of preparation for drying. These "riced" tubers were steamed before drying to destroy the enzymes which cause the raw potato to darken when exposed to the air. The calcium content of the potato is very low, and to remove any of it in the preparation for drying is a serious objection. This fact must be borne in mind if potatoes are to be dried extensively in this country. With our material there was only a slight darkening when the time between slicing and exposure to radiator heat was reduced to a minimum. In fact, the darkening was so slight that it could not be detected after the dried product was ground.

The physiologic importance of calcium in the feeding of growing organisms is now universally recognized. No other food supplies as much lime as milk. Some of the vegetables here analyzed, if fed in conjunction with milk or other foods, as the cereals, which are decidedly lacking in lime, will increase the available lime in the diet. There is a paucity of studies on the physiologic value of calcium in vegetables. From investigations conducted in this laboratory during the past year, the indications are that for at least two vegetables, spinach and carrots, the available lime is not as well utilized as that from milk or lime salts. Courtney, Fales and Bartlett indicate that in their experience one child, somewhat rachitic, showed an improved mineral balance on the addition of spinach to its dietary. The analyses here reported indicate the amount of lime present in some vegetables, which might become desirable as supplementary sources of calcium.



Calcium and nitrogen content of fresh and of dried vegetables: heavy lines, percentage content of calcium or nitrogen in the fresh vegetable; light lines, concentration of these elements in the same products dried.

SUMMARY

The quantity of water lost by the foods dried in this series is in accord with the values reported in Atwater and Bryant's analyses. The vegetables here studied contained from 71 to 97 per cent. of water.

In the case of some of the vegetables, the nitrogen content in terms of the dried product is in striking contrast with that of the original material, owing to the large losses of water.

Some of the materials are possible, valuable and hitherto unappreciated sources of lime. The calcium

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11. Snyder, H.: Bull. 43, O. E. S., U. S. Dept. Agr., 1897.
12. Wardall, Ruth A.: Vegetable Foods for the Diabetic, THE JOURNAL A. M. A., Dec. 1, 1917, p. 1859.

mice of from 15 to 20 gm. weight against 0.1 c.c. of an 18 to 24 hour old broth culture, of which 0.000001 c.c. was fatal to control mice of *similar* weights.

SUMMARY *

	Separate Methods		Simultaneous Methods	
	Number of Tests	Percentage	Number of Tests	Percentage
Tests in which commercial serums failed to protect as many mice as noncommercial serums......	13	12	0	0
Tests in which commercial serums protected as many mice as noncommercial serums	72	68	4	36
Tests in which commercial serums protected more mice than noncommercial serums	21	20	7	64
Total tests..................	106	100	11	100

* This table does not include seven retests following rejection of serums on original tests.

In carrying out the test, two mice were given a dose of 0.2 c.c. of the culture, two mice 0.1 c.c., and one mouse 0.01 c.c., all previously or simultaneously inoculated with 0.2 c.c. of the serum.

PROTOCOL 1.—TESTS SHOWING IRREGULARITIES IN GROWTH OR VIRULENCE OF CULTURE

Serum, 0.2 C.c.	Cultures				
	0.2 C.c.		0.1 C.c.		0.01 C.c.
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A
A	36	36	S	S	S
1	24	36	S	S	S
2	S	S	S	S	S
3	S	S	S	S	S

No Serum	Cultures					
	0.0001 C.c.		0.00001 C.c.		0.000001 C.c.	
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A	Mouse B
	S	S	24	S	36	S

Throughout all the tests the doses of all serums used was 0.2 c.c. The culture used was grown for from eighteen to twenty-four hours in plain broth to which a few drops of the blood of an infected mouse was added. The hours of survival of the mice after injection are indicated in the protocols by a number, except survival for ninety-six hours or more, which is indicated by an S. It was found that survival for ninety-six hours was adequate for test purposes. A parenthesized number indicates the hours of survival of a mouse which was found to be infected with a contaminating organism, when sectioned.

PROTOCOL 2.—TESTS SHOWING IRREGULARITIES IN GROWTH *OR VIRULENCE OF CULTURE*

Serum, 0.2 C.c.	Cultures				
	0.2 C.c.		0.1 C.c.		0.01 C.c.
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A
A	30	S	72	S	S
1	72	S	72	S	S
2	20	40	48	30	S
3	24	72	S	S	S
4	12	20	72	S	S

No Serum	Cultures					
	0.0001 C.c.		0.00001 C.c.		0.000001 C.c.	
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A	Mouse B
	24	30	28	36	28	40

All mice were examined *postmortem*, to avoid the confusion of irregularities due *to death* by infection with extraneous organisms, the commonest of which is the bacillus of mouse typhoid.

It is not surprising that variations occur when we consider that a culture *which necessarily* varies in virulence and density must be employed. The most *striking* irregularity in the results of the tests is the survival of *one* or *both* of *the mice* receiving the larger dose of culture, while one or both of those inoculated with a smaller dose succumb.

PROTOCOL 3.—*TESTS* SHOWING IRREGULARITIES IN GROWTH OR VIRULENCE *OF CULTURE*

Serum, 0.2 C.c.	*Cultures*				
	0.2 C.c.		0.1 C.c.		0.01 C.c.
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A
A	20	17	17	29	S
1	20	20	14	S	S
2	20	12	20	20	S
3	10	19	19	28	S
4	48	20	20	24	S

No Serum	Cultures					
	0.0001 C.c.		0.00001 C.c.		0.000001 C.c.	
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A	Mouse B
	45	45	S	S	S	S

Thus in 125 tests of serums other than the serum used for comparison, twelve, or 9.6 per cent., showed *this irregularity; and in nineteen* tests of the serum used for *comparison, four, or 21.1* per cent., were *similarly* irregular.

PROTOCOL 4.—TESTS MADE ONE MONTH LATER

Serum, 0.2 C.c.	Cultures				
	0.2 C.c.		0.1 C.c.		0.01 C.c.
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A
A	24	27	20	S	S
B	24	27	40	S	S
1	18	18	24	S	S
2	72	27	29	S	S
3	S	S	S	S	S
4	S	S	24	S	S
5	24	88	20	72	S
6	24	S	S	S	S

No Serum	Cultures					
	0.0001 C.c.		0.00001 C.c.		0.000001 C.c.	
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A	Mouse B
	24	28	27	27	36	38

IRREGULARITIES IN KILLING POWER OF CULTURE AND IN PROTECTION AFFORDED BY SERUM[1]

Protocols 1, 2 *and* 3 *indicate* the irregularities which occur in the growth or in the virulence of the culture. These tests were made each from a week to ten days later than the previous one, and the culture had been passed through one or more mice during the interval. They also indicate the irregularity of the protection afforded even by the same serum, A, at different tests.

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[1] The lettered serums, A, B, etc., are those of producers not engaged in interstate sale of serum, and the numbered *serums*, 1, 2, 3, 4, are of those engaged in the interstate sale. *The* numbers refer to different specimens of serum in each test.

Protocols 4 and 5 are of tests made respectively one and three months later, and show similar irregularities in the protection afforded.

Among twenty-one series of tests it was found that Serum A failed eight times, or 38.1 per cent., to protect one mouse against 0.1 c.c. of the culture, and failed to protect either mouse five times, or 23.8 per cent.

PROTOCOL 5.—TESTS MADE THREE MONTHS LATER

Serum, 0.2 C.c.	Cultures					
	0.1 C.c.			0.01 C.c.		
	Mouse A	Mouse B	Mouse C	Mouse A	Mouse B	Mouse C
A	22	23	44	(52)	S	S
1	20	(55)	S	S	S	S
2	15	23	24	S	S	S
3	22	S	S	S	S	S
4	S	S	S	S	S	S

No Serum	Cultures							
	0.00001 C.c.		0.000001 C.c.		0.0000001 C.c.		0.00000001 C.c.	
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A	Mouse B
	28	28	34	34	40	39	33	47

As it was considered possible that the method of injecting the serum previous to the culture might be responsible for irregularities, the method of injecting simultaneously after mixing in the syringe was tried with the results shown in Protocols 6 and 7.

PROTOCOL 6.—TESTS MADE BY SIMULTANEOUS INJECTIONS AFTER MIXING IN SYRINGE

Serum 0.2 C.c.	Cultures					
	0.2 C.c.		0.1 C.c.		0.01 C.c.	
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A	
A	21	21	23	S	S	Separate injection
B	14	14	26	S	S	
C	18	21	21	29	S	
D	18	23	21	23	S	
1	21	23	26	32	S	
2	17	S	73	S	S	
3	18	46	17	S	41	
4	17	54	90	S	S	
A	21	S	26	49	S	Simultaneous injection
B	17	26	S	S	S	
C	17	S	17	S	S	
D	49	S	23	23	S	
1	15	S	30	S	S	
2	18	S	41	S	S	
3	21	23	S	S	S	
4	(28)	S	34	S	S	

No Serum	Cultures					
	0.0001 C.c.		0.00001 C.c.		0.000001 C.c.	
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A	Mouse B
	30	30	21	30	34	36

Protocol 7 shows the rearrangement of the test as it has been carried out during the later tests. Three mice were put on each of two doses, 0.1 c.c. and 0.01 c.c. of the culture. This procedure was adopted, since for test purposes it was decided that the increment between the 0.1 and 0.2 c.c. doses was too small to be of practical value.

It is apparent from a survey of the Protocols 1 to 7 that there is little preference between serums produced by institutions engaged in the interstate sale of it and those which do not make the serum on a commercial basis.

That it may be appreciated that there is no inherent difficulty in the production of this serum on a commercial basis, a summary is presented.

From these results it would appear, further, that the method of testing adopted by the Hygienic Laboratory results in a greater percentage of failures of serums to pass satisfactorily, but that the irregularities are inherent in the test, and not due to slight modifications.

PROTOCOL 7.—TESTS AS REARRANGED

Serum 0.2 C.c.	Cultures						
	0.1 C.c.			0.01 C.c.			
	Mouse A	Mouse B	Mouse C	Mouse A	Mouse B	Mouse C	
A	25	35	48	(58)	S	S	Separate injection
1	16	88	S	S	S	S	
2	21	23	S	S	S	S	
3	18	48	S	S	S	S	
4	76	S	S	S	S	S	
A	22	23	44	(52)	S	S	Simultaneous injection
1	20	(55)	S	S	S	S	
2	15	23	24	S	S	S	
3	22	S	S	S	S	S	
4	S	S	S	S	S	S	

No Serum	Cultures							
	0.00001 C.c.		0.000001 C.c.		0.0000001 C.c.		0.00000001 C.c.	
	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A	Mouse B	Mouse A	Mouse B
	28	28	34	34	40	39	33	47

The lack of influence of preservative in the commercial serum was shown by the test recorded in Protocol 8 in which both preserved and nonpreserved serum of the same bleeding was used.

CONCLUSIONS

While it would seem that the mouse test is irregular in its results, it is believed that it affords in its present state a valuable measure of potency of antipneumococcic serum when properly controlled.

PROTOCOL 8.—TESTS WITH PRESERVED AND NONPRESERVED SERUM

	Serum 0.2 C.c.	Cultures				
		0.2 C.c.		0.1 C.c.		0.01 C.c.
		Mouse A	Mouse B	Mouse A	Mouse B	Mouse A
0.15% tricresol.....	A	21	S	26	49	S
No preservative...	1	15	S	30	S	S
0.2% 3-cresols......	1a	18	S	41	S	S
No preservative...	2	21	23	S	S	S
0.25% tricresol.....	2a	(28)	S	34	S	S
No preservative...	B	17	26	S	S	S
0.15% tricresol.....	Ba	17	S	17	S	S
No pres. stated....	C	49	S	23	23	S

	No Serum	Cultures					
		0.0001 C.c.		0.00001 C.c.		0.000001 C.c.	
		Mouse A	Mouse B	Mouse A	Mouse B	Mouse A	Mouse B
		30	30	21	30	34	36

The serum now available in the market is of as high a potency as that produced by laboratories not engaged in the sale of this product.

A Morgue Nuisance.—The opening of a morgue and undertaking establishment in a residence district, to the depreciation of the value of neighboring property, it is held in the Michigan case of *Saier* v. *Joy*, L. R. A. 1918 A, 825, may be enjoined as a nuisance.

FEEDING IN HYPEREMESIS GRAVIDARUM

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A review of the work done on the etiology of hyperemesis gravidarum shows that there is probably some kind of a toxic element in all cases which disturbs the vasomotor system and renders more sensitive the vomiting center. A neurotic factor is generally present as well as peripheral irritation from the uterus. The latter generally disappears when the uterus rises out of the pelvis. The vomiting is therefore of the reflex type. A toxic element that causes central vomiting may sometimes exist, but neither laboratory nor clinical proof has been adduced. Serious injuries to the liver or kidneys or other organs may result from starvation and acidosis. The danger to these organs resulting from inanition or toxemia or both can be fairly well estimated by the relation of the ammonia nitrogen to the total nitrogen. The determination must be made by methods that are really quantitative, preferably the Kjeldahl for the total nitrogen and the Folin test for the ammonia.

In treatment, therefore, the important thing is to feed the patient properly, beginning radical treatment early. Hospitalization and good nursing, and keeping the patient in bed, are necessary. On account of the great importance of the neurotic factor, suggestive therapeutics should be employed. At first nothing should be given by the mouth, not even water.

We have three methods of nonoral feeding at our disposal: the subcutaneous, the intravenous and the rectal, the relative efficiency and practicability of which must be considered. The practicability of a method includes its safety, its economy, the patient's freedom from pain, etc.

The principle that should guide us in nonoral feeding is to give all the necessary food elements if possible. If it is not possible to give a sufficient quantity of nitrogenous foods, we should give energy foods which save the tissues.

By the subcutaneous method, water, the salts, glucose, soluble vitamins and sedatives may be given. The method is not suited to the administration of alcohol, and is more painful than the rectal method, and should generally be replaced by the latter except in emergency cases.

By intravenous feeding, all substances may be administered that are given by the subcutaneous method. Woodyatt, Sansum and Wilder have shown the importance of regulating the velocity of the flow of the solution and have found that 0.85 gm. of glucose per kilogram and hour can be given without causing intolerance. At this rate about 40 gm. of glucose could be given every hour to a woman weighing 50 kg., and in six hours about 250 gm., which would give about 1,000 calories of energy. The method is valuable in emergency when available. It requires a special apparatus and technic and is hardly practicable for ordinary use.

Rectal feeding remains the most practicable and, when properly given, is efficient. By this method all essential food elements can be supplied, such as water, salts, glucose, amino-acids and vitamins. The deficiency in nitrogenous foods can be made up in part by giving an excess of glucose and by alcohol. Sedatives, especially sodium bromid, can be added as needed.

Because there is no digestion in the rectum or colon, no attempt should be made to give undigested proteins. Amino-acids and peptones dialyzed from artificially digested meat or milk may be given. Because sugar and starch digestion does not take place in the colon, carbohydrates should be given in the form of a monosaccharid, preferably glucose, which is absorbed without change. As the absorption of fats is doubtful, they should be omitted.

Solutions of vitamins from the pancreas or other sources should always be added if the feeding is to be continued for a considerable period of time. I am indebted to Prof. William A. Welker of the University of Illinois Medical School for this most important addition to the feeding in hyperemesis gravidarum. He has suggested the possibility that the toxic element in this affection may be a deficiency in vitamins caused by the increased demand of the rapidly growing embryo, and has suggested some experimental studies to discover the truth of this hypothesis. The fact that peripheral neuritis gravidarum frequently accompanies hyperemesis gravidarum is suggestive, as polyneuritis is the most important finding in beriberi, the type of disease due to deficiency in the accessory foods.

An energy food of great importance in rectal feeding is alcohol. According to the valuable studies of Neumann, alcohol is more readily utilized by the tissues than the other energy foods, carbohydrates and fats, even when these are present in large amounts, and its administration leads to the same economy of protein as the ordinary non-nitrogenous constituents of the dietary. As alcohol is more easily absorbed than glucose and as it helps to prevent fermentation in the colon, it proves of great value when given in proper amounts and concentration. If given in excessive quantities or too great concentration, it may be eliminated unchanged and may also injure cell tissue. If given in not more than a 5 per cent. solution and not to exceed 100 gm. a day, it is practically all consumed and harmless.

The great importance of calcium makes it desirable to add a calcium salt to the injection. The constant acidosis indicates the addition of sodium bicarbonate. To diminish the central reflexes, sodium bromid may be substituted for the basic salt sodium chlorid in sufficient amounts, generally from 3 to 4 gm. per liter (quart). There is no reason for giving a solution of salts of concentration to make an isotonic solution. It is probably better to restrict the salts to 7 per thousand.

The solution should be at body temperature. This cannot be secured by heating the solution in the irrigator can and letting it drop through an unwarmed tube. It is necessary to warm the tube near the distal end, that is, just before it is joined to the rectal tube. This can be done by means of hot sandbags. The rate of flow of one drop a second, giving 500 c.c. in two hours, is nearly always tolerated, if the rectum and colon have been properly prepared.

A large enema of at least 1 liter should be given every day to remove particles that continue to come down from the small intestine and also substances that may be excreted from the mucous membrane of the colon. This enema also should be a hypotonic solution, for example, 5 per thousand of sodium chlorid, in order that some water may be absorbed from it. A small amount of alcohol, 1 per cent., may be added in the hope that a small amount of nutriment may be supplied in this way.

The cleansing enema may be given early in the morning, at 7 or 8 a. m. Then the nutrient enemas would start at about 9 a. m., 2 p. m. and 7 p. m. Sometimes it will be found desirable to add 10 drops of tincture of opium to the evening enema.

The composition of the rectal feedings will have about the following proportions: glucose, 50; alcohol, 50; calcium chlorid, 0.3; sodium bicarbonate, 3; sodium chlorid or bromid, 4; vitamin, as much as is sufficient; distilled water, enough to make 1,000. From 300 to 500 gm. are to be given three times a day. This mixture has an energy value of about 550 calories. If 1,500 c.c. are given each day, the patient will receive 825 calories. In two or three days the retching stops, the thirst disappears, and the patient is in a fairly comfortable condition. The great nitrogen loss is stopped and the total nitrogen output in the urine is often reduced to 3 gm. in twenty-four hours. The ratio of the ammonia nitrogen to the total nitrogen also falls, although it may still remain more than 20 per cent.

It now becomes a difficult task to determine when stomach feeding may begin. As a rule, it is better to be cautious than hasty. The returning appetite of the patient and her confidence in herself is at times a guide. If the pregnancy is approaching the fourteenth week and the uterus is raising out of the pelvis, the mental change is often remarkably sudden. Likewise in markedly neurotic patients, the cures are often sudden. Lavage of the stomach is frequently very desirable before beginning oral feeding. The foods best taken are generally some forms of milk, such as peptonized milk, malted milk and buttermilk. Egg albumin is added early. Rectal feedings are discontinued gradually and not until the stomach feeding is reestablished. Even when the patient has recovered completely, she should be kept under control until the sixteenth or the eighteenth week, as discouraging relapses are not uncommon.

Management along the lines indicated promises success in practically all cases in which patients are treated before inanition becomes extreme. Even in extreme cases by the help of subcutaneous feeding, cures may be effected. The great difficulty is generally in obtaining and keeping control of the patient, largely because of outside influence. In a patient under control, the induction of abortion is practically never required.

2156 Sedgwick Street.

Utilization of Lobsters as Food.—Another of our great aquatic resources that has suffered from the failure or refusal of the states to be guided by the teachings of zoology is the lobster. If the states had given heed to the elementary needs of the lobster as proclaimed by Herrick, instead of shaping their course so as to conform with the interests of those who for years have been profiteering at public expense, they could have made the lobster a staple, moderate-priced food for all time, whereas it has become such a rare and expensive article that the food administration might very properly place an embargo on its use as a wholly unjustifiable extravagance. One alleviating circumstance is that through the adoption of a system of artificial rearing devised by the zoologist Mead, the lobster supply in the waters of Rhode Island has been maintained better than in any other state.—Dr. H. M. Smith, "Contributions of Zoology to Human Welfare," *Science*, March 29, 1918.

A STUDY OF FOUR HUNDRED POSTMORTEM WASSERMANN REACTIONS

SUPPLEMENTARY REPORT *

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The bibliography of the subject of postmortem Wassermann tests was covered in an article[1] published in 1916. No further study of the subject was published in 1917 by any one. In the first article the reasons for doing postmortem complement fixation tests for syphilis were discussed and the technic was described in detail. The results of 290 tests were analyzed and the following conclusions deduced:

1. Postmortem Wassermann reactions confirmed antemortem reactions in 95 per cent. of thirty-eight control cases. Positives were confirmed in serum six hours' postmortem and negatives in serum twenty-two hours postmortem.
2. In 90.4 per cent. of cases showing postmortem anatomic lesions of syphilis or presenting evidence of syphilis in their histories, the serums postmortem gave positive Wassermann reactions.
3. The fact that positive postmortem reactions appeared in thirty-eight cases, which did not present postmortem lesions or historic evidence of syphilis and in which death was due to acute infections, tuberculosis or malignant tumors, cannot be interpreted to mean that the reaction was caused by those diseases because, in the first place, the histories and necropsies in those cases were not nearly complete enough to rule out syphilis, and, in the second place, because serums from ninety-four patients who died of acute infections, tuberculosis or malignant tumors, examined under similar conditions, gave negative reactions.
4. Only 7 per cent. of 282 cases showed negative reactions in the presence of anatomic lesions (aneurysms) characteristic of syphilis.
5. The reactions conformed to the anatomic and historical evidence in 84 per cent. of the cases.
6. The fact that only eight, or 3 per cent., of the serums were anticomplementary indicates that the serums were in good condition.
7. The average percentage of specific reactions was almost as high postmortem as would be expected antemortem.
8. The positive reaction appeared in twice as many males as females, in three times as many negroes as whites, and in white females in only 4.3 per cent. of the cases examined.
9. The Wassermann reaction, performed on postmortem blood according to the methods followed in this investigation, is a reliable aid to the diagnosis of syphilis.

The original series of tests has been increased to 400, and the number of postmortem tests controlled with antemortem tests has been about doubled. They form a part of more than 6,000 tests done in the laboratory in the last three and a half years. These 400 tests have been studied and the results set forth in Table 1.

In the first series, we did not take into consideration in Class 3 bloods from which serums could not be separated or which were hemolyzed or otherwise unfit for use, but only those which, when used, proved anticomplementary. In the last series we considered all bloods taken and found unfit for use from any cause, although only three were anticomplementary. In the 6,000 Wassermann reactions, twenty-eight, or

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* From the Pathological Laboratory of the University of Louisville Medical Department and of the Louisville City Hospital.

[1] Graves, Stuart: A Study of Two Hundred and Ninety Postmortem Wassermann Reactions, Jour. Immunol., 1916, 2, 53.

0.46 + per cent., have been found anticomplementary and thirty-five, or 0.58 + per cent., have been found hemolyzed, coagulated or otherwise *unfit for use.* Our original conclusion is therefore strengthened that, if the postmortem serum appears all right and does not prove anticomplementary, it is safe for use. Confidence in the general results is further based on the results in Classes 1 and 2, in which the reactions were as might be expected from the anatomic findings or histories in 304 cases, or 76 per cent. In only ten of 400 were negative reactions found to contrast with *apparent syphilitic anatomic* lesions or positive evidence of syphilis in the histories. *If we find 2.5 per cent.* of negative reactions in living patients known to have syphilic, shall we argue that therefore the reaction is of no value? In the first series, all the patients of this class had aneurysms. Of the three in this series, one patient presented no anatomic lesions of syphilis, but gave a vague history of a chancre ten years before, although his *antemortem Wassermann reaction was only +.* The second patient presented a coarsely lobulated, sclerosed *liver with fanlike fibrous adhesions. His postmortem* Wassermann reaction agreed with his *antemortem* negative reaction. The third case was that of another aneurysm. In this the postmortem reaction was ± and the antemortem reaction negative. In the analysis of these three cases, the anatomic and historic evidence is surely overbalanced by the practical agreement of the reactions before and after death. On first thought, it seems strange that in eight of ten cases in Class 4, each showed the presence of an aneurysm, but in twenty-five other cases of aneurysms the postmortem Wassermann reaction was positive.

TABLE 1.—RESULTS OF 400 POSTMORTEM TESTS

	First Series	Second Series	Total	Per Cent.
Class 1. Wassermann tests positive with apparent syphilitic anatomic lesions or positive evidence of syphilis in histories	76	28	104	26
Class 2. Wassermann tests negative with no apparent syphilitic anatomic lesions and no evidence of syphilis in histories	161	39	200	50
Class 3. Anticomplementary or otherwise *unfit for use*	8	14	22	5.5
Class 4. Wassermann tests negative with apparent syphilitic anatomic lesions or positive evidence of syphilis in histories	7	3	10	2.5
Class 5. Wassermann tests positive with *no apparent syphilitic* anatomic lesions and no evidence of syphilis in histories	38	26	64	16
	290	110	400	100

We now come to Class 5, embracing positive Wassermann reactions in cases that revealed no anatomic lesions that could be regarded as syphilitic and offered no positive evidence of *syphilis* in their histories. These have been classified as in the earlier article into three subdivisions.

Of the twenty-six cases in the second series in this class, five showed a ± reaction, two + and five ++, leaving only fourteen of 110 which showed positive +++ or ++++ reactions without evident anatomic or historic evidence of syphilis. Of the latter, three agree with antemortem Wassermann reactions, which is of greater importance than the apparently unwarranted positive reactions. This class has been analyzed in the first article and explained conclusively, it seems to us. Here we shall simply revise the table of race and sex, which speaks volumes to any one who has worked where negroes are numerous.

Against the reliability of the Wassermann test, both antemortem and postmortem, it has been argued that, because the reaction appears positive in cases in which *syphilis is not objective or historical* while various infectious lesions are obvious, these diseases must *bring about changes in the blood that* cause complement fixation. Would it *not* be more *logical* to conclude that deaths in these cases have resulted from the most common fatal diseases, such as pneumonia and tuberculosis, to say nothing of *violence, in* patients who were mostly ignorant or unfortunate, *or in* vicious colored persons who were simultaneously victims of *early or late or treated syphilis? If the* positive Wassermann reaction is to be attributed to pneumonia, or *tuberculosis,* or other *infectious lesions, or* to malignant tumors, because it appeared in patients who had died of those lesions, of what weight is that argument when it is shown that, of the 161 cases in this series which gave negative postmortem Wassermann reactions and, with the exception of the last two, presented no evidence of syphilis, *121* were negative in patients dying from the following diseases: lobar pneumonia, 34; pulmonary tuberculosis, 16; *lobular* pneumonia, 14; acute peritonitis, 13; acute nephritis, 6; carcinoma, 5; acute vegetative endocarditis, 4; generalized tuberculosis, 8; tuberculous enterocolitis, 2; pneumococcus meningitis, 2; streptococcus meningitis, 1; meningococcus meningitis, 1; empyema, 3; perihepatic abscess

TABLE 2.—CLASSIFICATION OF POSITIVE WASSERMANN TESTS WITH NO EVIDENCE OF SYPHILIS

A. Bodies sent by coroner *to laboratory for necropsy.* No history whatever. Examination often partially restricted to evident cause of death. No opportunity for antemortem physical examination.

Stabbed to *death* (*Wassermann* + and Wassermann ++ in two cases)	3
Cardiorenal (*Wassermann* + *in one case*)	3
Shot to death	2
Lobar pneumonia	2
Burned to death	1
Choked to death	1
Skull fractured	1
Generalized tu*berculosis*	1
Total	14

B. Patients admitted to hospital but coming to *necropsy* as coroner's cases *because* dying within twenty-four hours or *without obvious* cause. *Little* or no opportunity for *history* or physical examination.

Lobar pneumonia	4
Pulmonary tuberculosis	1
Generalized tuberculosis (Wassermann *only* +)	1
False elephantiasis of genitals	1
Burned *to death*	1
Stabbed to death	1
Traumatic *septicemia*	1
Shot to death	2
Acute *pericarditis*	1
Acute *meningitis*	3
Acute peritonitis	1
Typhoid	1
Total	18

C. Patients admitted *to hospital. Necropsy permission* from *next of kin or friends* or *municipal* authorities in cases *of patients* without relatives or friends.

Generalized tuberculosis	3
Lobar pneumonia (one only +)	2
Cardiorenal *(one only +)*	2
Acute appendicitis and peritonitis (only +)	1
Streptococcus meningitis (only ++)	1
Gangrene of intestine, intestinal obstruction	1
Acute pyelonephritis	1
Acute tubular nephritis (negro male, aged 20)	1
Shot *to death*	1
Carcinoma	1
Pulmonary tuberculosis	6
Lobular pneumonia	2
Ulcerative endocarditis	1
Strangulated hernia	1
Lymphoblastoma	2
Sclerosis of liver	1
Acute peritonitis	2
Hemorrhage following operation	1
Typhoid	1
Acute enterocolitis	1
Total	32

following gastric ulcer, 1; acute pericarditis, 4; brain tumor (not yet diagnosed), 1; hypernephroma, 1; lymphosarcoma, 1; pyonephrosis, 1; carcinoma with infectious nephritis and aneurysm of the aorta, 1; bilateral pneumonia and pericarditis with apparently syphilitic sclerosis of the liver, 1; and tuberculous pneumonia with aneurysm of the aorta, 1? The answer may be applied to Class 5 in Table 1.

TABLE 3.—RACE AND SEX OF PATIENTS WITH POSITIVE WASSERMANN TESTS AND NO APPARENT SYPHILIS*

A. (C. O.)	14 cases	Negro	Male	7	13
			Female	6	
		White	Male	1	1
			Female	0	
B. (C. H.)	16 cases	Negro	Male	5	10
			Female	5	
		White	Male	4	6
			Female	2	
C. (H.)	34 cases	Negro	Male	13	23
			Female	10	
		White	Male	7	11
			Female	4	

Total negro males	25
Total negro females	21
Total white males	12
Total white females	6
Total	64

* C. O. refers to coroner's cases in which persons died outside the hospital and were never admitted. C. H. refers to coroner's cases in which death occurred in the hospital. H refers to regularly admitted patients or cases in which there had been some opportunity to take a history or make a physical examination. In the first two classes there had been no such opportunity.

Of 378 reactions, 168, or 44 4-9 per cent. were positive. Of course it must be realized that these positive reactions were obtained in a charity hospital, and 73.1 per cent. were negroes. The distribution as to race and sex is shown in Table 4.

TABLE 4.—DISTRIBUTION OF POSITIVE SERUMS

	Male	Per Cent.	Female	Per Cent.	Total	Per Cent.
Negroes	73	43.4	50	29.7	123	73.1
White	34	20.2	11	6.5	45	26.7
Total	107	63.6	61	36.2	168	99.8

The results of previous investigators and ours are compared in Table 5.

TABLE 5.—COMPARISON OF RESULTS IN DIFFERENT SERIES

	Number of Cases	Positive	Per Cent.
Bruck	101	59	58.4
Seligman and Blume	100	28	28.0
Schlimpert	361	46	18.7
Luksch	309	145	46.0
Simmonds	160	33	21.0
Lubarsch	262	55	21.0
Löhlein	149	42	28.2
Veszpremi	100	46	46.0
Krefting	115	43	37.0
Nauwerck and Weichert	206	57	28.0
Grüber	300	101	30.0
Moody, Jackson and LeCount	88	66	75.0
Graves	378	168	44.4
Total	2,629	889	33.8

Perhaps the strongest evidence in favor of the reliability of the postmortem Wassermann reaction is found in the controlled cases. In the first series, only two flat discrepancies were found in thirty-seven cases, a confirming average of 95 per cent. We have reason to believe that these discrepancies were not the fault of the reaction. In thirty-one additional controlled cases, not a single discrepancy of this type has been found. On the other hand, there are several cases which show interesting confirmation. In one case (A 16-214) the reaction was ± on the blood taken three days antemortem. Postmortem, it was the same, although absolutely no connection between the two was known when the latter test was done. When the serums are examined and the tests read, they are identified by numbers only. The same patient had had a ++++ reaction followed by two doses of arsphenamin (salvarsan) and several injections of mercuric salicylate during his last six weeks. In another case (A 17-1) a ++++ reaction on a spinal fluid postmortem reaction followed a ++++ reaction on the blood antemortem. The necropsy showed gumma of the calvarium and meninges, in which the *Spirochaeta pallida* was demonstrated by the Levaditi method. Similar evidence could be multiplied. In sixty-eight control cases, then, only two contradictions are found, a confirming percentage of 97+. Any series of complement fixation tests, running over a period of three and a half years, with specimens submitted by a large number of different people under varying conditions, which offers a confirming percentage of more than 97, is surely reliable. A ++++ antemortem reaction confirmed a ++++ reaction sixty hours postmortem. The longest time postmortem after which a negative agreed with an antemortem negative in the same case was twenty-two hours.

Having proved in these two papers, as we believe, that Wassermann reactions on bloods taken and tested under the conditions described are reliable, we may ask, Of what value is a postmortem Wassermann reaction? It is of value, first, because it affords material help in the diagnosis of pathologic anatomy. Not even with such technic as devised by Warthin can one always decide with the microscope whether or not a given lesion had its origin in syphilis. It is impossible at the postmortem table to investigate the history of the unknown, latent syphilis or a fresh infection. If a serologic test will produce positive evidence, it frequently will solve a puzzling pathologic problem. Second, and possibly of greater importance, is the value of a reliable postmortem Wassermann reaction in medicolegal cases. Sometimes the question of syphilis is of far-reaching effect. It could conceivably be a deciding factor in the disposition of a large estate. Frequently, it arises in insurance cases.

It seems strange that a question of such importance has not been studied more. Only one other paper on the subject has been published in English. Leading textbooks on serology barely mention it. The prevailing opinion seems to have been that the postmortem Wassermann reaction was unreliable and without value. The opposite is proved in this investigation.

CONCLUSIONS

1. Postmortem reactions confirmed antemortem Wassermann reactions in 97 per cent. of sixty-eight controlled cases. A ++++ positive reaction, sixty hours postmortem, was confirmed by a ++++ antemortem in a case with anatomic and clinical evidence of syphilis. A negative Wassermann reaction on blood taken twenty-two hours postmortem was confirmed by a negative antemortem Wassermann reaction.

2. In 91.2 per cent. of cases showing anatomic lesions of syphilis and presenting evidence of syphilis in their histories, the serums postmortem gave positive Wassermann reactions.

3. The fact that only 2.5 per cent. of the serums were anticomplementary or otherwise unfit for use compares favorably with 1.14 per cent. similarly unfit in 6,000 antemortem specimens.

4. Only 2.6 per cent. of 378 cases showing anatomic evidence of syphilis gave negative Wassermann reactions.

5. The reactions conformed to the anatomic and historical evidence in 304 of 378 cases, or 80.4 per

cent., which is considerably lower than it would be if satisfactory histories and physical examinations were recorded in Class 5.

6. There is no logical reason for supposing that acute infections or malignant tumors cause positive Wassermann reactions.

7. The positive reaction appeared in 2.7 times as many negroes as whites, in 1.7 times as many males as females, and in only eleven white females, or 6.5 per cent.

8. The Wassermann reaction, made on postmortem blood according to the methods followed in this investigation, is practically as reliable a test for syphilis as when done antemortem, and is of great value in pathologic anatomy and in medicolegal cases.

THE AGGLUTINATION OF HUMAN RED BLOOD CORPUSCLES BY HORSE SERUM *

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This study seemed of interest to us because of the increasing use, frequently intravenous, of horse serum in large doses, chiefly in the form of curative serums for the infections. Agglutination of the red blood corpuscles of animals by the serum of animals of other species has been extensively studied, especially by Bordet. Some observers also allude to the agglutination of human red corpuscles by horse serum. We have tested nineteen specimens of serum and we have found that it frequently agglutinates human red corpuscles in the test tube.

Nine of these were normal horse serum, only one of them containing a preservative (phenol [carbolic acid] or a cresol). Ten were antistreptococcus serum, antidysentery serum, antipneumococcus serum or the like, purchased in the open market or issued by official laboratories, all presumably produced from the horse and usually containing a preservative. The specimens came from six different localities. Some of them were nearly a year old. We used some normal horse serums a few days after they had been taken from the animal.

We examined all serums for bacteria by streaking drops on agar slants, rejecting those that gave growths, with one exception. The latter was a serum that had been tested on a large number of blood specimens before its contamination was discovered. We have used the results in this case because they were entirely in accord with our other results, and the bacterial contamination was moderate. Neither the age of a serum nor the addition of a preservative seemed to influence agglutination. Some of the serums were tested with only two lots of blood corpuscles, others with more than thirty different specimens of blood. In all, samples of blood from about seventy-five different individuals were used. Some of these were tested with from five to seven different serums. Most of the samples were collected in 1 per cent. sodium citrate in physiologic sodium chlorid solution; all were centrifuged and washed three times.

Five tubes were used to test a given serum with one specimen of blood. They were so mixed that the tubes contained 1 c.c. of a 1 per cent. suspension of red cells in the sodium chlorid solution, and serum in the desired dilution. The final dilutions of serum used were 1:20, 1:50, 1:100 and 1:200. A control with no serum was kept in every case. The blood specimens were never more than forty-eight hours old, and usually were less than twenty-four hours old. After the blood cells and serum were mixed, the tubes were incubated at 36 C. for one hour, and then allowed to stand in the room for a few minutes. The results were estimated both by the appearance to the naked eye and by examination of drops under the microscope. It was observed that the longer the tubes stood after removal from the incubator to a lower temperature, the more distinct was the agglutination. Our readings were usually completed an hour after removal of the tubes from the incubator. The readings made with the naked eye, and those made under the microscope usually agreed well; but the microscope furnished somewhat the more delicate test. With strongly agglutinating serums, the red corpuscles settled into a firm mass that could be broken up with difficulty at the bottom of the tube. In such cases the microscope would show clumping of practically all the red corpuscles into large masses, of probably from twenty to a hundred or more cells in a clump. In other cases the clumps were smaller, and frequently there were many free cells between the clumps. Without exception, the intensity of agglutination was greatest in tubes in which the concentration of the serum in the mixture was highest.

RESULTS

Of the nineteen serums tested, twelve produced some agglutination of human red blood corpuscles in the test tube, while seven produced practically no agglutination, in dilutions of 1:20, the blood corpuscles being in 1 per cent. suspension, and the temperature not being exactly that of the body, but more or less below it.

The twelve positive serums agglutinated half or more of the samples of blood with which they were tested in 1:20 dilutions; and ten serums did the same in 1:50 dilutions.

Two serums agglutinated each two different specimens of blood in 1:200 dilutions; and one serum, in 1:500 dilution, showed slight but definite agglutination of each of two specimens of blood when the tubes had stood in the refrigerator over night. The last was an antimeningococcus serum, nine months old, smelling of phenol or a cresol, and sterile by culture test. Different specimens of blood cells showed considerable differences in the amount of agglutination when they were tested with the same serum. These differences, however, were distinctly less striking than those shown by different samples of serum with the same blood. It will be understood, of course, that the blood corpuscles in these test tube experiments were suspended in about 100 times as much fluid as when in normal blood, in order to demonstrate small amounts of agglutinin, if present.

Ottenberg,[1] working on isoagglutination in human beings, concluded that agglutination may fail to take place if the concentration of agglutinin in the serum is low, or if all the agglutinin is absorbed by an excess of red corpuscles. Using our most powerfully agglutinating serum (the antimeningococcus serum mentioned), with undiluted whole citrated blood, when a platinum loopful of blood was mixed with a loopful of the serum at room temperature, agglutination occurred at once and was nearly complete. When a loopful of serum diluted five times and several loopfuls of blood were used, well marked agglutination took place in from four to five minutes. It is doubtful, however, if such experiments imitate closely conditions in the living body.

Having noted in our tests that agglutination was usually most marked when the mixtures in the tubes

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* Presented in abstract at the meeting of the American Association of Pathologists and Bacteriologists, March 29, 1918.

[1] Ottenberg, R.: Jour. Exper. Med., 1911, 13, 425.

were allowed to stand for some time at room temperature, we made our readings throughout with this fact in view, in the hope of better detecting small amounts of agglutinin. We varied our original test by keeping the serum and the 1 per cent. suspension of red corpuscles, and the mixtures of them after they were prepared, in a water bath at 37 C.; and a single dilution of the serum of 1 : 20 was used. Six serums that had previously been found to have little or no agglutinating power gave practically the same result as before. Of three serums that had shown decided agglutination by the original technic, two gave well marked agglutination in 1 : 20 dilution after one and one-half hours at a temperature of 37 C. In the third serum, which was the antimeningococcus serum mentioned already as having marked agglutinating power, the result was startling. In the 1 : 20 dilution, no agglutination was visible after six hours in the water bath at 37 C. but agglutination became marked after the same tube had stood at room temperature about half an hour. The possibility that temperature might be an important factor in such experiments was suggested to us by the experience of Rous and Robertson,[2] who state that in rabbits repeatedly transfused with rabbit blood, agglutinins may develop, but agglutination of the rabbit's red corpuscles appears only at temperatures below 35 or 36 C., a fact which was determined by observations outside the body.

VALUE OF THE EXPERIMENTS

There are probably other factors also that make the application of test tube experiments to the living body of uncertain significance. Furthermore, in those human cases in which the administration of serum may be practiced, there is usually a disturbance of some of the functions, especially of the circulation, and frequently an alteration of body temperature from normal. Our problem is therefore one of great complexity.

An enormous amount of work has been done in trying the effect of alien serums on living laboratory animals. Among a multitude of investigators, certain observers assert that the agglutinating action of an alien serum for red blood cells may be the cause of an animal's death; while others contend that death is probably due to other properties of the serum.[3]

As far as we have examined the evidence, it seems to us inconclusive. Some cases of death after transfusion from man to man have been reported, in which death was probably due to agglutination of the red blood corpuscles.[4]

Our own experiments on animals with injections of normal foreign blood serum have given results that were not convincing. We have also immunized guinea-pigs by successive injections of washed rabbit red blood cells. The serum of these guinea-pigs became agglutinative and hemolytic for rabbit red cells. Heating the serum destroyed its hemolytic but not its agglutinative power, in dilutions of about 1 : 500. Rabbits, on receiving the heated guinea-pig immune serum intravenously, in doses of from 4 to 8 c.c. per kilogram, died in a few hours or over night in about half the experiments. The dilatation of the right heart and of the veins in general, and the numerous masses of agglutinated red corpuscles found in the vessels, made a very striking picture. Decolorized red corpuscles and staining of the blood serum, however, together with a dark color in the urine, were also present, giving clear evidence that hemolysis had taken place. Therefore, like other observers, we have not been able to exclude the possible action of a toxic substance in our *experiments.*

One of our objects in reporting our observations is to give force to the suggestion that in human cases that result fatally, in which large injections of serum have been given, the possibility of agglutination of red corpuscles should be considered at necropsy; and in suitable cases blood examinations might be made during life. Also if normal horse serum or an immune serum is to be used in large doses, and especially by intravenous injection, a safe and simple precaution would be for the investigator to take a little of the horse's blood, just before the final bleeding, and test the serum for agglutinating power with a number of specimens of human blood, rejecting any horse whose serum had distinct agglutinating power. In the case of horses to be used for making immune serums, such a test would, of course, be performed before beginning immunization.

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[2] Rous, Peyton, and Robertson, O. H.: Jour. Exper. Med., 1918, **27**, 509.

[3] Coca, A. F.: Virchow's Arch. f. path. Anat., 1909, **196**, 92. Loeb, L., Strickler, A., and Tuttle, L.: Virchows Arch. f. path. Anat., 1910, **201**, 5. Zinsser, H.: Jour. Exper. Med., 1911, **14**, 25. Kritchewsky, J. L.: Jour. Infect. Dis., 1918, **22**, 101.

[4] Ottenberg (Note 1). Bernheim: Blood Transfusion, Philadelphia, J. B. Lippincott Company, 1917, p. 69.

Military Medicine and Surgery

THE UREA INDEX AS A TEST FOR KIDNEY FUNCTION IN A WAR HOSPITAL *

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During the past nine months, observations on nephritis have been made in this hospital, with McLean's[1] urea index as a test for kidney function. The results have been so helpful for diagnosis and prognosis that the technic employed and certain case protocols are recorded in order to show that the test can be carried out advantageously in a tent hospital with only elementary laboratory facilities.

McLean's directions were followed absolutely. Before each test the patient was given from 150 to 200 c.c. of water, to insure a free flow of urine. One half hour later, in order to start with the bladder empty, he voided. The time of voiding was recorded to within one minute. About thirty-six minutes later, at least 3 c.c. of blood were withdrawn from an arm vein into a dry tube containing a few milligrams of potassium oxalate to prevent clotting. At the end of seventy-two minutes from the first voiding, the bladder was again emptied, the urine carefully measured to within 1 c.c., and used for analysis. The patient took no food or water during this period. Otherwise no restrictions were placed on him. The seventy-two minute period was merely for convenience, as being one twentieth of twenty-four hours. Any other period, preferably not too long, would serve.

Analyses were made by the most accurate, convenient and rapid method available for determination of urea in the blood and urine. The urease method, introduced by Marshall,[2] fulfilled all of the requirements. This method depends on the breaking down of urea into ammonia and carbon dioxid by the specific enzyme found in the soy bean and the subsequent determination of the ammonia. The permanent preparation of urease described by Van Slyke and Cullen[3] was used, and determinations were carried out in the manner described by them, with a few necessary modifications. The method is simple, very rapid and requires the minimum of manipulation. Three analyses are necessary: blood urea, urine urea, and urine ammonia. The last is determined in order to correct the urea figure for preformed ammonia, which is also determined in the urea method. Since the method depends on the quantitative determination of ammonia by its aeration into weak acid and titration of the excess acid with alkali, it was necessary to use some sort of aeration apparatus. A water suction pump would have been satisfactory, but water was not always available. However, it was found that an ordinary chest aspirating pump produced sufficient vacuum to complete the reaction in about forty-five minutes.

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* From the Medical Division of U. S. A. Base Hospital No. 5.

[1] McLean, F. C.: Jour. Exper. Med., 1915, **22**, 212, 366; Clinical Determination of Renal Function by an Index of Urea Excretion, THE JOURNAL A. M. A., Feb. 5, 1916, p. 415.

[2] Marshall, E. K., Jr.: Jour. Biol. Chem., 1913, **14**, 283.

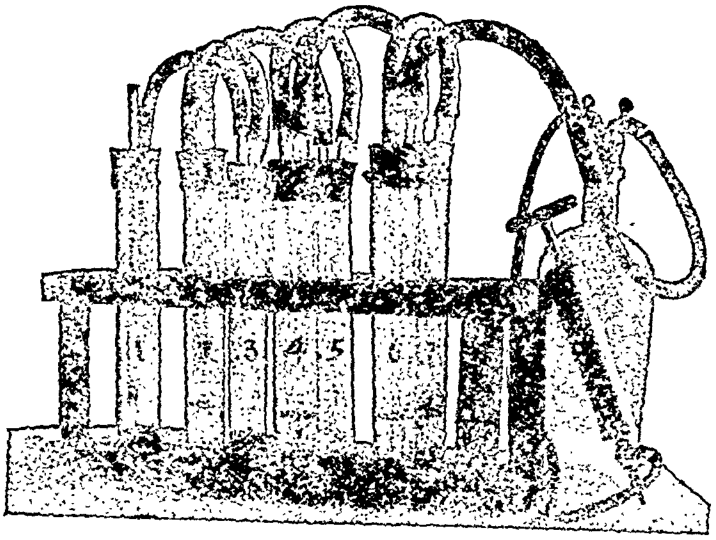

Fig. 1.—Apparatus for aeration of ammonia into fiftieth normal acid with chest aspirating pump: Tubes 1, 2, 4 and 6 contain fiftieth normal acid, Tube 1 being used to absorb whatever ammonia may be present in the air. Tube 3 contains urine only; Tube 5 contains urine and urease; Tube 7 contains blood and urease. The current of air is drawn through the tubes from 1 through 6 by means of the chest pump and vacuum bottle.

The acid and alkali used in titration are fiftieth normal and hundredth normal alkali and fiftieth normal acid. Such weak solutions tend to change if they are allowed to stand too long. To obviate this, normal solution were kept in tightly stoppered bottles from which a few cubic centimeters were frequently taken and diluted in calibrated flasks with the proper amount of distilled water. Every week or ten days the solutions were checked.

To carry out the test, therefore, the apparatus included burets for hundredth normal and fiftieth normal alkali, an aspirating set, and the few necessary reagents and the glassware. The equipment could be packed in a small box and set up anywhere in a few minutes. The entire time used for a test was only seventy-two minutes for the period and about seventy minutes for the completion of the analyses.

The results from the determination were calculated to the form in which they are to be expressed in McLean's formula. The weight of the individual should be known to within 1 kg. As scales were not always obtainable, the patient's weight was estimated and was assumed to remain constant during as many tests as were made. This introduced a slight but inevitable error. The four variables were substituted in the formula and the index calculated by McLean's special calculating device on a 10 inch slide rule.[4] With a little practice in reading the scales, calculation became mechanical and required only a few seconds. Without a slide rule, calculation could be performed by logarithms.

Perhaps the most striking case encountered to demonstrate the prognostic value of the test was the following:

Case 1.—*History.*—Private C. A. B., aged 24, admitted, Jan. 22, 1918, had been well all his life except for attacks of "nephritis" in 1915 and 1916. Despite this previous history, he had no difficulty in getting into the Army and was able to do his work satisfactorily. About the end of December, or a month before coming to the hospital, he began to notice that he became easily tired, having to fall out on marches, and getting short of breath on exertion. When he arrived in the hospital, he was comfortable, except for considerable dyspnea, and said that he felt as well as he had for several days.

Physical Examination.—His face was puffy and pale, though there was no demonstrable edema elsewhere. His heart was slightly enlarged to percussion, the action regular, not rapid, the sounds of good quality, a blowing systolic murmur was heard over the precordia, loudest at the base. The systolic blood pressure was 135 and the diastolic 45. There were no signs of peripheral arteriosclerosis nor eyeground changes. The lungs were negative except for numerous diffuse scattered râles in both sides of the chest without signs of consolidation or hydrothorax. The abdomen, genitals and extremities were negative. A casual specimen of urine contained a trace of albumin, was pale, of low gravity, and contained a few leukocytes and an occasional cast. Without functional studies, the patient gave the impression of having nephritis, not notably sicker than many others who had been admitted previously. Analysis, however, showed the blood urea to be 3.72 gm. per liter, and that the urea index was less than 1. These facts, discovered within two hours after the patient's admission, proved that the man was critically ill and made it seem probable that he would die within a short time. The subsequent course is shown graphically in Figure 2.

Course.—As can be seen, there was no oliguria until the last three days of life, the excretion of chlorid was not materially interfered with, there was no marked albuminuria, and there was a dropping blood pressure. During the first few days the patient appeared to be improving. Thus from clinical and routine laboratory observation alone, it would have been impossible to recognize the seriousness of the patient's condition. However, a second urea index three days

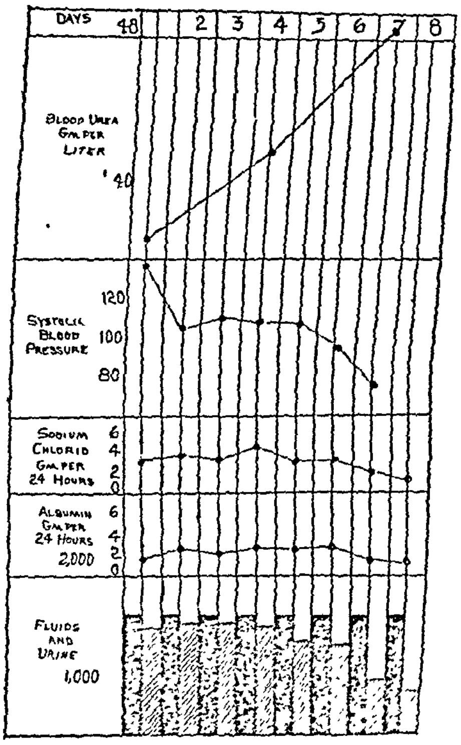

Fig. 2.—Renal function in Case 1.

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[3] Van Slyke, D. D., and Cullen, G. E.: Jour. Biol. Chem., 1914, **19**, 211.

[4] The rule, with directions for use, may be obtained from the Keuffel and Esser Company, 127 Fulton Street, New York.

after entry showed that the index was again less than 1, and that the blood urea concentration had climbed to 4.15 gm. per liter. Three days later the patient became oliguric, the blood urea rose still farther, and the patient died. At necropsy the kidneys showed a typical chronic glomerular nephritis with extreme atrophy of both kidneys, especially of the left, which weighed only 50 gm.

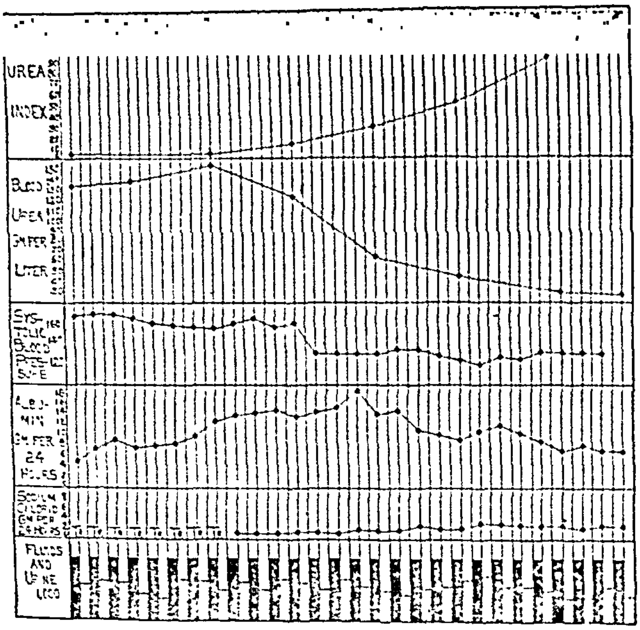

Fig. 3.—Renal function in Case 2.

Two other less serious cases are recorded to show the satisfactory fashion in which the course of an acute nephritis can be followed by this test, and the results of slight modifications in treatment.

Case 2.—*History.*—Private G. B., aged 40, admitted, Sept. 19, 1917, had been well until seven days before entry (September 12), when he suddenly felt headache and general malaise, soon followed by shortness of breath and the development of generalized edema. Despite these symptoms, he carried on until two days before entry (September 17).

Physical Examination.—The man was orthopneic, with marked edema of the face, sacrum and legs. There was no hydrothorax or ascites. The heart was not enlarged, the action was regular, not rapid, and the sounds were normal. The systolic blood pressure was 166 and the diastolic 80. The lungs were normal except for a diffuse bronchitis without signs of consolidation. The abdomen was normal, as were the eyegrounds. The observations made on renal function are shown in Figure 3.

Course.—As can be seen, during the month that the patient remained in the hospital, he had a persistent oliguria so that his edema, by actual weight, increased. For the first fifteen days, the excretion of albumin rose, and for the first twelve days, the blood pressure remained almost constantly elevated. From this evidence alone, it would have seemed that the patient was making little if any progress. The blood urea and urea index, however, gave valuable additional information. During the first eight days, the blood urea rose from 1.3 gm. per liter to 1.5 gm. per liter, and the index stayed below 10. These facts pointed to a severe nephritis, which was possibly increasing. After this, the blood urea fell rapidly to normal and the index rose, both beginning to change before the excretion of albumin had reached its highest figure and before the blood pressure had dropped. These findings showed that the patient was beginning to improve before there was any clinical evidence of it. The patient was evacuated with normal blood urea and urea index, though there still was massive edema. It seemed safe to predict that the patient would gradually improve and that eventually "dechloruriaation" and polyuria with loss of edema would occur. A letter written two months later by the patient's medical officer at home proved that such was the case.

Case 3.—*History.*—Private W. F. C., aged 34, admitted, Jan. 21, 1918, had noticed during the previous year that he had passed more urine at night than by day, but had felt well and able to work. About three weeks before entry (January 1), he became increasingly short of breath, began to complain of headache, and to develop edema in his face and ankles. At entry he was comfortable. His heart was not enlarged and was negative except for a faint systolic murmur over the precordia. The systolic blood pressure was 200, the diastolic 90.

Physical Examination.—The lungs and abdomen were negative. There was marked brawny edema on the face, legs and entire body. The eyegrounds showed slight vascular changes and one hemorrhage, which cleared up in about six weeks.

Course.—For the first twenty-four days the patient showed no frank diuresis, although the water output seemed to be gradually increasing. The excretion of albumin rose steadily and the blood pressure remained between 180 and 200. Thus, here again, from routine examination the patient seemed to improve very little. However, the blood urea fell gradually but consistently, and the urea index rose. It was safe to believe, therefore, that the condition was improving satisfactorily. Finally there was a diuresis accompanied by increased chlorid output and disappearance of edema. At

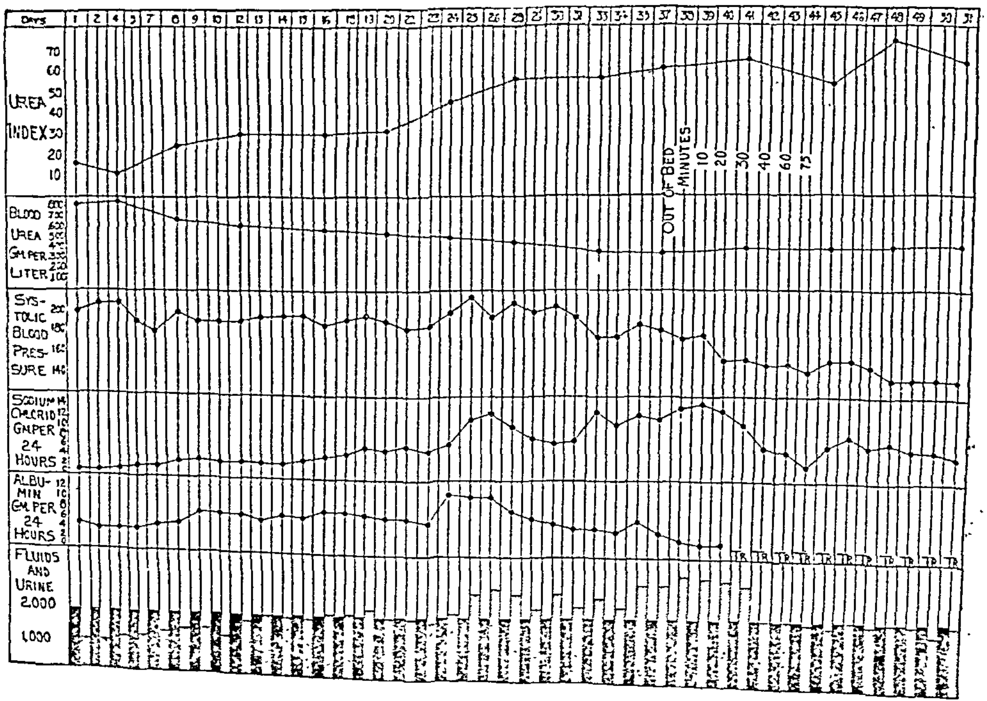

Fig. 4.—Renal function in Case 3.

about the same time, the albuminuria diminished and the blood pressure began to fall. The man seemed so much better that he was allowed up for increasing lengths of time after being in bed for thirty-nine days. There seemed to be no immediate effect. On the day after he had been up for seventy-five minutes, however, the urea index was definitely lower than it had been before, and because of this he was kept in bed once more. Three days later the index had risen again. It was concluded from this observation that further rest in bed was indicated, and that actual harm had been done in attempting to get the patient up too rapidly.

COMMENT

These examples are sufficient to show that the urea index test for renal function can be applied satisfactorily in a tent hospital with little if any laboratory facilities. A legitimate question is whether it has any advantages over the phenolsulphonephthalein test of Rowntree and Geraghty[5] under such conditions. As McLean has shown, the curves of percentage of phenolsulphonephthalein excreted in two hours and of the urea index are parallel and are quite striking. In certain respects the phenolsulphonephthalein test is the simpler. It seemed, however, that for field work phenolsulphonephthalein had one serious disadvantage. Phenolsulphonephthalein is a nontoxic dye substance which must be injected either intravenously or intramuscularly. While this procedure is never troublesome where asepsis is certain, under field conditions it is preferable to use intramuscular or intravenous treatment as little as possible. Moreover, patients do not like to be injected every day or two with a foreign substance which leaves even a slight local reaction. The urea index, on the other hand, requires only 3 c.c. of blood, which can be taken with a fine needle so simply that no patient will mind several bleedings in one day, and the test does not require any foreign body. For these reasons the urea index seemed the more satisfactory method.

On the whole, it becomes evident from the cases reported that the urea index is a feasible test for kidney function in a war hospital without particular laboratory facilities. As McLean has said, the method is applicable in a wide range of cases, easy of performance, and gives results that prove of practical value in the recognition, prognosis and treatment of certain conditions associated with impairment of renal function.

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[5] Rowntree, L. G., and Geraghty, J. T.: The Phthalein Test, Arch. Int. Med., March, 1912, p. 294.

Mortality of Childhood.—In a reprint from the quarterly publication of the American Statistical Association for March, 1918, Louis I. Dublin, statistician of the Metropolitan Life Insurance Company, tabulates and analyzes the number of deaths and causes of death in the different age periods from birth to the age of 15 as shown by the returns from the registration area, and draws conclusions and recommendations as to the reduction of the death rates for the period between the ages named. He says there is opportunity and need for concentrating the efforts of the public health movement on the further reduction of child mortality. The reduction already accomplished shows large possibilities for conservation of life. The preschool years of childhood have as yet received little attention from the life conservation movement however, public health programs having more to do with the children after they enter school. The extension of infant welfare stations and clinics is suggested. An important consideration is improvement in our sources of information on child life, through accurate census-taking, improved birth registration, and a greater exactness in death registration.

THE STREPTOCOCCUS EPIDEMIC AT CAMP ZACHARY TAYLOR, KY.

A SURVEY *

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It was expected that the acute respiratory diseases would share with meningitis the responsibility for the morbidity and mortality of the Army camps. It was, however, the pneumococcus from which it was thought the greatest number of infections would come, so that the history of the acute infections of Camp Zachary Taylor was as surprising as it was interesting. Pneumonia in its lobar form, due to the pneumococcus, appeared early in the autumn months and has continued at the rate of about fifty cases a month ever since, a summary of which is given in the accompanying tabulation.

DETERMINATION OF PNEUMOCOCCI

	No.
Type I	37
Type II	29
Type II a	6
Type III	0
Type IV	93

The field was soon occupied by the streptococcus, which did not confine itself to the respiratory tract, but extended its malign influence to practically every tissue of the body, appearing, indeed, in the form of an epidemic infective agent. Chronologically, measles appeared after the pneumococcic pneumonias, typical in character, moderate in severity and leading to a few deaths, the number being the usual for the adult. The cause of death was bronchopneumonia, generally distributed through the lungs, and of the character usually associated with measles. A report on the pathology of all these infections has been submitted by Lieutenant Lucke. It is noteworthy that there was an insignificant number of cases of scarlet fever and chickenpox, and no cases of whooping cough.

On the appearance of the great wave of the streptococcus infections, late in November, the clinical picture and pathology changed noticeably. The men became ill very rapidly, were completely prostrated, and gave the appearance of having a profound toxemia; empyema began to appear; pathologically, the lesions turned from catarrhal to hemorrhagic, and the anatomic evidences of septicemia were manifested. At the same time also there began to appear severe angina, tonsillitis, otitis media et interna, and mastoid abscess, followed in several instances by meningitis. There were also some cases of erysipelas, and streptococcus cellulitis from one or another local cause.

By this time we were well aware of the presence of this streptococcus epidemic, and looked at it as separate and distinct from the measles. We based this view on the multiplicity of lesions caused by it, which stood in no relation to measles, and on the change in the pathology of measles itself as seen at the necropsy table. That the measles may have been increased in severity by the presence of a streptococcus is undoubted, but we believe that the two epidemics existed as separate entities. This is further strengthened by the history in the late winter, as measles subsides while the streptococcus even increases its virulence with the production of primary sepsis and serositis, frequently ignoring the lungs and giving a high mortality.

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* From the Laboratory and Medical Services, Camp Zachary Taylor, Kentucky.

ORIGIN OF THE INFECTION

Searching for the explanation of this infection, it seems most probable that it is a local process in some and a primary septicemia in other cases. Early in the history of the infection there were clinical reports of initial bronchitis, and evidences of pneumonia. In these the spread to the pleura may have been lymphogenic or peribronchial, as McCallum has suggested, the later sepsis being in these instances due to spread through the blood stream. In the recent cases, however, it would seem more likely that the process was a primary septicemia, although the infection atrium is clear in no case. The cases of primary empyema must surely be due to hematogenic spread, because, first, there was no pneumonitis in five of them; secondly, there was no cervical cellulitis and lymphadenitis with extension into the thorax, and thirdly, streptococcemia existed. There was also a case of primary pericarditis.

As the epidemic is reviewed, the gradual and sustained rise of virulence is noteworthy and requires an explanation. It seems desirable to mention that the autumn of 1917 at Camp Zachary Taylor was made unpleasant for the soldiers by considerable wind and dust; the latter was quite irritating and occasioned considerable coughing. The ground here is of clay and sand and has been highly cultivated. This may have contributed to the origin of the infection. A large percentage of soldiers at Camp Zachary Taylor are from rural or small town districts, and it is in such men that the infection has taken the greatest hold. It seems that the streptococcus has experienced a rise of virulence by ever appearing increments of newly exposed individuals.

When men arrive at the camp, some are in the incubation period of communicable disease, some are feeling the effects of the use or abuse of their last fling of freedom, and some bring infective organisms with them. For example, it was found that 15 per cent. of one contingent, mixed rural and urban, arrived at camp carrying hemolytic streptococci in the pharynx. Whether or not the draft men arrive depressed in vital resistance, by one cause or another, the first period of their life here is new to them and they are subjected to unaccustomed conditions, exercise, excitement, and exposure both to the elements and to infective agents. This results in fatigue, insomnia, and general depression of resistance until they have taken their bearings. With such an opportunity it seems that everything favors an increase in virulence of any organism that may be passing about, the effect being the same as the exaltation of virulence obtained by passing an organism through a series of animals in the laboratory. The movements of men in the camp, at Y. M. C. A. buildings, theaters, mess halls and barracks offer an excellent opportunity for the transmission of infection. The picture is sharpened by a consideration of the lack of knowledge of personal hygiene on the part of many men, especially in the depot brigade, before they have had sufficient instruction from the officers. They hawk, cough, sneeze and blow the nose without protecting the face, thus spreading the infection by droplets. When they get into the camp proper they meet new men heavily infected with streptococci, because it has been shown that the organism is to be found in all organizations. In one company of men, at camp an average of six months, 83 per cent. carried hemolytic streptococci in the pharynx. Another factor that assists in enhancing the virulence of the bacterium is a delay in early diagnosis of an illness, either because the man himself does not know he is a menace, or because he is not inspected sufficiently often. One reason certainly is that it is left to the soldiers to report themselves at sick call, whereas the medical man should go after the soldiers to weed out communicable diseases early. When soldiers crowd in the infirmaries for sick call, those with incubating infections contaminate those about them.

While, from the foregoing, it is evident that we consider the camp as an incubator of this streptococcus infection, it is nevertheless true that attempts should be made to prevent the men coming to it with an acute disease under way. A task that might be taken by the local exemption boards is that an inspection of the draft could be made at their station of departure, that is, before they board the trains and expose their fellow travelers to the camp.

METHOD OF COMBATING THE EPIDEMIC

Our attack on this epidemic entailed the following procedures:

The isolation of all measles patients entering the hospital, shown by blood-agar plates to have hemolytic streptococci in the pharynx, from those free from the organism. It has been shown by Alexander and Levy that the complications of measles are directly connected with the presence of streptococci in the pharynx, and that the isolation of such clean cases materially reduces hospitalization. All measles patients are swabbed in an observation ward.

The examination of dust from recreation rooms and certain barracks demonstrated streptococci. Proper policing of floors washed with disinfectants slightly reduced the morbidity.

It was suggested that whenever several streptococcic cases appear in a company, the whole personnel should be swabbed and the carriers isolated. This was found impracticable, because the barracks did not lend themselves to such arrangements, and military training would be greatly disarranged.

All patients with infectious diseases are put in wards arranged on the cubicle system with sheets, and all persons walking around or coming into the ward are masked.

Experimentation has been undertaken with several solutions of seemingly practical character to destroy streptococci on the pharyngeal wall. These have been unsuccessful so far. Several carriers who have failed to clear up with the use of various solutions in the ward, have promptly done so after being placed out on the porches with abundance of fresh air, good food and exercise.

It has further been proposed that all incoming individuals be swabbed for the presence of streptococci, and those harboring them isolated from the carriers. This has thus far been impracticable because of the absence of suitable small isolation units.

Because of the low resistance of the human being to the streptococcus when it once gets started, it seems that protective vaccination might offer some advantage, even though animal experimentation has not, in the past, demonstrated that serviceable antibodies in any considerable quantity are developed in the lower animals. This does not indicate that a cellular immunity might not occur if these organisms were used in the vaccine. It is certain that a clinical experiment of this sort with a personal record of the soldier so immunized would be the only answer to the question.

In addition to the foregoing, a detention camp in which men may rest and become acclimatized is imperative, and it should be arranged in small units, so that measles immune and nonimmune, streptococcus carriers and noncarriers or suspects of any kind may be quarantined for three weeks. Visitors should be prohibited; indeed, the isolation should be complete, with attention at all times to amusements and instruction, to prevent the men becoming restive.

When men report at infirmaries they should be separated while awaiting attention, and masked if coughing or complaining of a sore throat. The wards should be divided by sheets into cubicles, and general measures used to prevent crossed infections. All patients coming to the base hospital are masked, and on arriving at the receiving ward are given a cursory examination to find out into which one of the arranged cubicles they are to be put to be further examined and await their transfer to a ward. All wards for infective cases are arranged in cubicles, and all ambulant persons in the ward and all visitors are masked and gowned.

The use of masks in wards and latrines is similar to the method installed at Camp Grant by Major Capps.

CONCLUSION

The study of an epidemic of streptococcal infections in Army camps shows it to be a comprehensive problem of many interrelated parts, each of which should be analyzed and controlled. The local exemption boards may be regarded as multiple foci of potential disease feeding into the camp; the depot brigade as the portal of entry of men and infection into the camp, and the regimental infirmaries as the outpatient department of the base hospital.

A STUDY IN WAR NEPHRITIS

A NEW CONDITION ASSOCIATED WITH HEMORRHAGES IN THE BLADDER WALL AND URINARY SYMPTOMS: PRELIMINARY REPORT *

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Any review of the literature on war nephritis leaves one with the feeling that the subject lacks definition. There seem to be but two possible interpretations of the great variance of views and conclusions that appear: the first, that no single clinical entity is sufficiently inclusive to explain them all; the second, and more radical, that there is no such distinctive disease as "war nephritis."

It was from the latter point of view that we decided to approach the subject: we wished first to learn whether such a distinctive disease as war nephritis existed, and, if so, how to distinguish it from other varieties of acute nephritis. It was impossible to attack the problem from all sides at once, and we therefore restricted our preliminary work almost entirely to the careful clinical observation of every patient with nephritis, albuminuria and hematuria that came into the hospital. Practically we were only looking for a lead, hoping to find a loose end by means of which we might help to unravel the tangle.

Up to date, 155 cases have been studied. The amount of work done in each instance depended entirely on the nature of the case. We have found, among other things, an apparently undescribed condition that may prove to be a clinical entity. This paper is intended as a preliminary report of this condition, on which we are continuing our studies as fast as the limited amount of the material allows.

Of the 155 patients examined, seventy-three, or 47 per cent., were found to be suffering from chronic cardiac or renal disease with a recurrence of symptoms. In eight of these cases the first attack had occurred at the front; these may be called "recurrent war nephritis." Fifty-eight gave pretty clear evidence of previous cardiac or renal disease in history, physical signs of course. Seven gave no history of previous cardiac or renal symptoms, but suggested in their course an underlying chronic affection. This whole group represents largely the inadequacy of our methods of estimating normality. The relatively high number of cases of recurrent war nephritis (eight, or 5 per cent.) would seem to indicate that men who have suffered from this condition are unfitted for active duty in the front area. All these men had been returned cured after several months' treatment.

Of the remaining eighty-two cases, forty-nine presented a syndrome which marked them definitely as acute nephritis. Some of them were indistinguishable from similar cases seen in civil practice. Others differed in the relative importance of certain symptoms. The distinctive features of these cases have been brought out by Sir John Rose Bradford,[1] and, more recently, by Dunn and McNee.[2] We have nothing to add to their able descriptions of war nephritis proper.

A small group of eight patients developed signs of nephritis in the course of what appeared to be typical trench fever. In four of these the nephritis appeared as a transient albuminuria with casts, which rapidly cleared up. Five had hematuria as well, two had dyspnea and two edema. In only two cases was the course prolonged, and in those two, albumin and casts were still found in the urine after two months' treatment. Whether or not the trench fever bore any causal relation to the nephritis we are unable to say; but the occurrence of renal complications in these cases leaves one with the impression that the hitherto accepted view of the absence of after-effects from trench fever is not entirely satisfactory.

Four cases of panurinary infection were found. All were febrile cases with pyuria, and in all the presence of a cystitis and double bilateral renal infection was demonstrated by means of cystoscopy and ureteral catheterization. From the urines of which cultures were made the colon bacillus was obtained.

Early in the course of the work we received a patient with profuse hematuria who complained of symptoms strongly suggesting vesical calculus or papilloma. Cystoscopic examination by one of us revealed neither stone nor neoplasm, but, instead, multiple submucous hemorrhages in the bladder wall and blood pouring from both ureters. Since then we have found fourteen other patients with the same bladder picture, and latterly have been able, in several

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* From No. 1 (Presbyterian, U. S. A.) General Hospital, B. E. F.

[1] Bradford, J. R.: Quart. Jour. Med., 1916, 9, 125; Jour. Royal Army Med. Corps, October, 1916.

[2] Dunn and McNee: Brit. Med. Jour., 1917, 2, 745.

instances, to anticipate the condition we should find, before performing cystoscopy. These fifteen cases make up 10 per cent. of all the nephritics received during the course of this study, and 15 per cent. of all the acute nephritics, proportions that render the condition of more than passing importance.

The clinical picture presented by these patients, if they are considered as a group, was entirely different from that of ordinary acute nephritis. The predominant symptoms, and the only constant ones, were profuse hematuria, frequency of urination and urgency, and pyrexia of an irregular and variable type. The majority also had pain on urination. In a few cases a diagnosis of renal calculus had been made, on account of the association of renal colic and hematuria. These patients later suffered from difficulty in starting the urinary stream, and from severe suprapubic and urethral pain. Cystoscopy revealed the presence of the typical vesical lesions, and in four cases in which the operation was performed while the patients still showed gross hematuria, blood was seen emerging from both ureters. The colicky pains have in every case been coterminal with the gross hematuria, and may have been due to the passage of clots which, in some cases, were later found in the urine. The frequency and dysuria often persisted after the urine had completely cleared up.

Only one of these patients was afebrile throughout the course of the disease. In most cases the initial temperature was quite high, and in one instance 103.8 while under our observation. Of course our records are incomplete, because we have scant notes on the initial period of the disease. The temperature curve is very irregular, and no definite type appears. However, there seems to be a tendency toward slight relapses after the first remission.

RESULTS OF EXAMINATIONS

History of Previous Illnesses.—One patient had had scarlet fever without complications in 1915. Another had diphtheria twenty-six years ago, and rheumatism nine years later. One had been subject to tonsillitis. Three said that they had suffered from some shortness of breath on long marches, but had had no other symptoms of cardiac disease. One had had edema of the face and limbs two years before, which was ascribed to poisoning. Two patients had had gonorrhea; the remainder denied venereal diseases, and none showed any evidences of existing gonorrhea or syphilis. Two had been rejected for the Army, one in 1915 and the other in 1916, but did not know why. One of these had a marked myopia. All were members of active line organizations except one, an orderly of this hospital who had passed a careful physical examination before admission to the Army. Their ages ranged from 19 to 36. All had been in France for at least four months, and all except the orderly mentioned above were in the front area at the time of onset of the illness. With the possible exception of the one patient who had had general edema, then, the cardiac and renal histories may be considered negative.

Mode of Onset and Prodromes.—In nine of the fourteen patients the onset was sudden, with hematuria and its concomitant symptoms. One said he had "felt queer" for twelve hours before the hematuria began. One, after a severe cough of seven days' duration, suddenly developed hematuria, urgency and dysuria. One complained of increasing weakness for six days before the onset of urinary symptoms. (As this patient failed to recognize a gross hematuria, even after he had burning urination and frequency, it is possible that he may have passed blood earlier.) Another had headache, nausea and vomiting for two or three weeks before the appearance of urinary symptoms. Seven complained of weakness or giddiness at the time of onset, and one of these fainted twice. Eleven had headache. Ten had pains in the small of the back, sometimes resembling renal colic. A considerable number also complained of pains in the legs. Four vomited, and one had diarrhea for twenty-four hours only. Two besides the patient mentioned above complained of cough. Two of the three cases in which temperature records were obtained showed a pyrexia within twenty-four hours of the first appearance of urinary symptoms.

Two cases have not been included in the previous discussion for reasons that will appear, and will be considered separately later.

Physical Examination and Clinical Findings.—Those patients who were admitted during the febrile stage of the illness approached, in general appearance, the picture of an acute infection; later the most striking features were pallor and general debility. Unfortunately we were unable to determine the actual degree of anemia except in one case. In this, both red cells and hemoglobin were reduced about 40 per cent. Three of the cases showed herpes labialis, and in one instance the lesions later became infected. With these exceptions the skin and visible mucous membranes were clear, but for the usual pediculosis and scratch marks. Cutaneous, oral and conjunctival hemorrhages were never found, in spite of repeated examinations. Edema and dyspnea were noticeably inconspicuous. Puffiness of the face was observed once and reported once in the history; the former patient was also reported to have had slight swelling of the legs at the onset of his illness. Exertional dyspnea was not common, and occurred only in association with pyrexia. With one exception no signs of respiratory disease were discovered. This patient had had a severe cough, antedating his urinary symptoms by ten days. On admission the cough was subsiding, but râles, dulness and increased voice and breath sounds were present over the right upper lobe. Abnormal cardiac signs were discovered in four cases: One showed a transient enlargement of the area of cardiac dulness without murmurs; two, systolic murmurs without enlargement, and one, a slight persistent enlargement with a transient systolic murmur. There were no disorders of cardiac action. The spleen was palpable in one instance. The liver was never found enlarged either by palpation or by percussion. Tenderness in the upper abdomen was present in two cases, and tenderness in one or both costovertebral angles in five. In spite of the frequency of pains in the legs, tenderness in the shins and calves was present only once, and then was very slight.

Special Examinations and Laboratory Findings.—Repeated blood pressure examinations were made by the auscultatory method with the Tycos apparatus. The tension was never found elevated, reaching 140 as a maximum in only a single observation. Ophthalmoscopic examinations in eight cases revealed no hemorrhages nor other abnormalities. Of seven blood cultures, only two showed any growth. In both of these, single colonies of cocci (probably pneumococci) were found. It is safer to consider these as contaminations, for the present at least, as subsequent cultures from the same subjects proved negative. From the catheterized bladder urine in eight cases, staphylococci, obviously contaminating organisms, were obtained in culture three times; the other specimens were found sterile. The following mediums were used: broth, glucose agar, hydrocele-glucose-agar and blood agar. In two cases, anaerobic cultures were also set up.

White blood cells and differential counts on six patients showed so little uniformity that no conclusions can be drawn from them. A red cell count and hemoglobin estimation on one patient showed 2,700,000 cells with 60 per cent. hemoglobin, a considerable anemia. No morphologic changes were observed in the cells except some central pallor. No nucleated red cells were found.

All the patients exhibited gross hematuria, of variable duration, in the early stages of the condition. All but one showed casts at some time. Usually the casts were of the hyaline and granular types; but frequently epithelial and red blood cell casts were present. Although gross blood did not persist very long, erythrocytes were observed in the urine as late as the fifty-ninth day of the disease in one case, and the forty-first day in another. Only once was any considerable number of leukocytes seen, and never frank pus. Sometimes the urine became negative for a period, with a later recurrence of albumin and casts. Albumin was seldom very marked; in most cases it could be fully explained by the amount of blood present. Only one patient was discharged with consistently negative urinary findings; and another, who is still in the hospital, has now had a negative urine for ten days. The majority left the hospital with a slight trace of albumin and a few casts; six showed blood cells persistently. The periods of observation varied from the eleventh day of the disease to the seventy-second. Although we have tried to follow these cases by means of cards, we have as yet received no replies.

The only renal function test which we have been able to employ is the phenolsulphonephthalein test. In all but three cases there has been a definite diminution in the excretion of the dye, the output varying from 15 to 48 per cent. in two hours. When repeated tests have been made, an improvement of function has usually occurred with convalescence.

Cystoscopy.—Cystoscopic examination of the earlier cases was undertaken to determine the origin of unexplained hematuria associated with symptoms pointing to lesions of the lower urinary tract. A striking and unusual picture was found: multiple hemorrhages in the bladder mucosa, unassociated with inflammation, tumor or stone. In those patients presenting gross hematuria at the time of cystoscopy, bloody urine was seen coming from both ureteral orifices. Renal tuberculosis and neoplasm were thought of, but seemed unlikely in view of the symptoms and other findings enumerated elsewhere, and, moreover, would offer no elucidation of the bladder picture.

The cystoscopies were done from four to eighteen days after the onset of the illness. In all of the thirteen patients whose bladders were examined, practically the same conditions were found: multiple small hemorrhages into the bladder mucosa without ulceration. There were from two to over twenty in each case, and, when numerous, they appeared to be somewhat grouped. They varied in size from minute punctiform spots to areas about 1 cm. in diameter, and were irregular in shape, often like a broad flame. They were usually situated definitely along the course of visible blood vessels, and were more common on the posterior wall and the posterior parts of the lateral walls of the bladder; twice they were present on the anterior wall, but associated with more numerous ones posteriorly. In four cases the trigon was involved, chiefly the proximal part, but not particularly the neighborhood of the ureteral openings. In every instance the ureteral orifices were normal. The bladder mucosa was normal (except for the hemorrhagic areas) in all but two cases, in which general engorgement of the blood was found.

Latterly five patients have been reexamined by cystoscopy. In none were we able to say that a new crop of hemorrhages had appeared. In four no sign of the old hemorrhages could be found, thirty, twenty-one, twenty and eight days after the first cystoscopy. In the last of these four cases, the original observation was "fifteen to twenty *minute* hemorrhages." In the fifth instance referred to there were numerous moderate sized lesions, some of which were still recognizable twelve days later, though of a brownish rather than a red color, and with less distinct borders.

Examination of the urethra by endoscopy should be made, and we hope to include this in the future studies.

Althought it is relatively easy to detect slight bleeding from the bladder wall or a tumor, with a good cystoscope used in a water medium, we have seen no bleeding from the bladder mucosa in any case. Moreover, it is not uncommon to find red blood cells in the urine of these patients after the bladder has cleared up. In some cases we have actually seen blood coming from the ureters, and we feel strongly that the upper urinary tract is the source of most of the blood found in the urine in the cases under discussion. Also, in view of the fact that the bladder evidences clear up rather rapidly, that recurrent hemorrhages into the bladder have thus far not been found, and that at present we are dependent on these cystoscopic signs for a diagnosis, it seems quite possible that the pathologic condition we are describing is more common than our figures show.

In two cases there was tenderness in one or both renal regions, but in no instance were the kidneys definitely felt. The external genitalia were uniformly normal. The prostate and seminal vesicles showed evidence of chronic inflammation on rectal palpation in only one case of the ten thus examined, and this man denied gonorrhea, and had not a trace of pus in the urine at the time of examination.

Pathologic Report.—We were able, by means of a small punch, to obtain specimens from the hemorrhagic spots in three cases. On section, these showed no typical lesions. The mucosa was entirely normal and unbroken. The submucosa showed a profuse and somewhat patchy infiltration of well preserved red blood cells, but no leukocytic infiltration, and nothing suggesting an inflammatory lesion. The blood vessels were somewhat engorged. In one specimen, small nodular accumulations of degenerating connective tissue cells and wandering cells were found in the vicinity of the small arterioles. No organisms could be demonstrated by Gram, Giemsa or Wright stain.

Two cases have thus far been omitted from the discussion. Although these patients ran entirely different courses from all the others, and gave evidences of hemorrhages elsewhere than in the urinary tract, it is impossible to leave them out entirely because they presented typical noninflammatory bladder hemorrhages, the only distinctive feature of the condition we are describing. One died with a general hemorrhagic condition, but at the onset of his illness the bleeding was confined entirely to the urinary tract. The other, after a six weeks' illness resembling trench fever, developed almost simultaneously cerebral symptoms and hematuria. The neurologic consultant thought the former could be explained only by multiple small cerebral hemorrhages. The typical bladder picture was found at cystoscopy, and the urine contained both blood and casts. The subsequent course, including urinary symptoms, was similar to that seen in other cases of this group. It may be that we are dealing with a hemorrhagic disease which usually reveals itself only in the urinary tract, but, in severe cases, also affects other organs.

COMMENT

The consistent presence of casts in the urine, and the reduction of the phenolsulphonephthalein excretion seem to be sufficient evidence to justify us in saying that these patients have a renal lesion. On the other hand, they differ in very essential respects from ordinary cases of acute nephritis. The common symptoms of edema and dyspnea are almost entirely lacking, as are uremic manifestations. Moreover, although we have examined by cystoscopy eighteen patients who had typical nephritis and hematuria, none have shown bladder hemorrhages, the most striking feature in our cases.

Sir John Rose Bradford[1] in 1916 suggested the presence of a distinct hemorrhagic nephritis. We quote from his article:

> In some instances, especially if the case is seen early, the urine may contain a large quantity of blood, so as to be obviously red to the eye. . . . Such cases present a rather different clinical picture to the general run of cases in that with them dropsy is neither so frequent, nor when present, so marked a feature of the case. Further, these hemorrhagic cases more frequently have pyrexia and resemble much more closely in their course infective nephritis dependent upon some microbic invasion. . . . In a few instances the hematuria and pyrexia have been intermittent and recurrent, producing a clinical picture closely resembling that seen in renal embolism; but these patients have not been suffering from any condition liable to cause embolism. . . . These cases, however, are few in number, and are quite different from the ordinary form of nephritis . . . where dropsy is really the dominant physical sign.

Dunn and McNee[2] have also called attention to a similar group of cases in their clinical analysis, but make no such distinction in the pathologic study.

The cystoscopic picture is entirely different from that seen in acute cystitis, where hemorrhages may occur but are associated with other signs of inflammation. Hemorrhagic spots removed from such bladders as controls presented an intense leukocytic infiltration, edema and tissue degeneration about the hemorrhages.

The bladder hemorrhages can not at present be distinguished from any other purpuric lesions, but a purpura of such frequent occurrence, which is apparently limited, in at least a large proportion of cases, to the urinary tract, is in itself worthy of note. Scurvy seems highly improbable.

It is possible that we may be dealing with a type of anicteric spirochetosis. A few microscopic examinations of catheterized urine sediments stained by the Fontana and India ink methods have been negative.[3] Of course, the evidence that we are dealing with a clinical entity is not complete, but the frequent occurrence of such a distinctive syndrome makes it seem probable.

We are continuing and enlarging the work, and hope that we shall be able to present detailed results with complete protocols at an early date.

PARAFFIN PAPER AS A SURGICAL DRESSING

CHARLES M. HARPSTER, Ph.G., M.D.
TOLEDO, OHIO

On account of the small supply and high cost of gauze, paraffin tissue paper will be found an excellent dressing for burns or any other condition in which a nonadherent dressing is desirable. It is far superior to the paraffin dressing of burns by the spray method, is much more easily and rapidly applied, results in more rapid healing of the burned surface, and is more easily removed.

In the first stage of burns, when there is great pain, the various ointments now in use can be applied directly to the paraffin paper and this applied to the burned area after all vesicles have been opened. It has the advantage of excluding the air, which relieves the pain of the burns, and it is readily removed at the time of redressing, leaving the developing granulations unaltered.

The first dressing, of pure petrolatum on paraffin paper, is applied directly to the burn, and over this a layer of cotton and the usual bandage. As the paper is impervious to moisture, the serum that seeps from the injury runs away from the raw surface, and is absorbed by the outer dressings beyond the injury. There is no sticking to the burn or other wounds, when the dressings are removed. Experience has proved that dressings once in two or three days are sufficient in most cases. Certain cases, however, may require more frequent dressings.

Paper bandages, which are now being universally used, perhaps more through necessity than choice, have been found to work well in certain dry dressings. But the thought arose, what a great saving could be accomplished if they could be used on moist dressings or dressings in which there is considerable oozing or drainage. Here again, the paraffin paper can be utilized as a barrier between the moist dressings and the paper bandage. It has the desired effect of keeping the moisture inside the dressing, and prevents the paper bandage from becoming wet and tearing easily.

The paraffin paper can be secured at almost any store where groceries are sold. An attempt is being made to have some dressing manufacturers put it up in sterile packages for general surgical use.

The advantages of the paper were accidentally discovered when a suitable dressing for a severe burn was needed at a patient's residence. The paper was ideal in this case. It has been employed in numerous other instances, and I have mentioned only a small number of its uses. It can take the place of oil silk or rubber tissue, in which case a double sheet is desirable, or, as I hope to secure soon, a heavier coated paper.

301 Wedgewood Building.

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[3] More recently, injection of catheterized urine into guinea-pigs has proved negative in three cases.

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SATURDAY, JUNE 8, 1918

SCIENCE AND FOOD PRODUCTION

The admonition of the United States Food Administration that we must save meat includes an implication to the dietetically thoughtful person that some other form of food rich in protein should be substituted for it in the diet. Among the products suggested for this purpose none offers greater promise of value than cheese. The attempt to encourage the use of cheese, in place of meat, is the more timely because, along with butter, it represents a way in which milk can be stored, so to speak, for future use. Furthermore, the administration officials have recently given assurance that large stocks of cheese are now on hand in this country and awaiting consumption. Until recently, at any rate, the United States could not be regarded as a cheese-eating nation in the same sense in which this might apply to European peoples. A census made in 1909 estimated the production of cheese for the United States at about 311,000,000 pounds. To this must be added a considerable importation, so that the cheese consumption was about 3½ or 4 pounds per person per year. This is a low figure in comparison with the amounts of meat and butter consumed, thus suggesting that there is room for considerable increase in the use of cheese.

One obstacle to the wider dietary employment of cheese in the United States at present lies in the fact that many types of this food have traditionally been imported; and until comparatively recent times it has been firmly believed—as still assumed by the majority of cheese lovers—that most of the many favorite brands cannot be produced elsewhere than at the original place of manufacture. The principal importations have been of Parmesan and Gorgonzola cheese from Italy; Emmenthal cheese from Switzerland; Roquefort, Camembert and Brie from France, and Edam cheese from Holland. These, however, by no means exhaust the list, particularly of the varieties which the epicure frequently has adopted.

Precisely as we are rapidly learning that the "made in Germany" brands of drugs and chemicals and diverse other essential items can be successfully replaced by home-made products, it is becoming evident that the quality of cheeses is not so much a question of countries and climes as of micro-organisms and science. When our dairy mycologists began to direct their attention to the changes that milk undergoes during fermentation and the ripening of cheese, it early became apparent that the nature of the product could be controlled and modified by the application of scientific methods. About three quarters of the cheese used at present in the United States is of the Cheddar type, often spoken of as American cheese. But cheeses of the Brie, Camembert, Neufchâtel, Swiss and Limburger types are also being successfully manufactured here, particularly in the great milk producing states of New York and Wisconsin.

The hard cheeses, such as the American Cheddar and the Swiss types, depend on a suitable bacterial flora for their normal development. In the softer cheeses, molds play an important part in the ripening. In these types also a rapid development of lactic acid bacteria is necessary to bring about the proper physical condition of the curd in the various stages of manufacture. Dr. Thom of the Bureau of Animal Industry, the foremost expert in this field of research, has shown that a specific mold, which he has termed *Penicillium roqueforti*, is concerned in the ripening of Roquefort, as well as of Gorgonzola and Stilton cheeses, and is responsible in large measure for their peculiar flavor.[1]

The problems of Roquefort cheese are illustrative of what our men—and women—of science are being called on to solve. This food product, which has been produced in southeastern France for at least two centuries, is a hard rennet cheese made from the milk of sheep. The imitations of it have been prepared from cow's milk, so that questions of identity of procedures and product have naturally become pertinent. In a recent investigation by Evans[2] in the Dairy Division of the Bureau of Animal Industry, it has been shown that the micro-organisms essential for the manufacture and ripening of Roquefort cheese are *Streptococcus lacticus* and *Penicillium roqueforti*. *Streptococcus lacticus* decomposes the lactose during the manufacture of the cheese, and thus produces the lactic acid necessary for the cheese making. These organisms disappear from the cheese after two or three weeks, being killed by the high concentration of sodium chlorid. The remaining flora of Roquefort cheese consists of cheese streptococci and *Bacterium bulgaricum*, organisms that are found in all kinds of ripening cheese. These organisms do not have any significant part to play in the ripening of Roquefort cheese. All experimental cheeses of this variety were made from cow's milk, but there was no evidence of any essential variation from the imported product. Such experiments in the control of complex biologic reactions and the reproduction of recognized desirable food products under new conditions of manufacture are timely and commendable. They initiate new possibilities and they attest the universality of science. Recently many persons have begun to look on science as an agent of subjugation; but it is certain to be far more potent as a force for the emancipation of mankind.

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MODERN VIEWS OF HAY-FEVER AND ASTHMA

Recent work on hay-fever, asthma, eczema, urticaria and angioneurotic edema is being rewarded with interesting results. It has been noted that these various diseases are frequently associated in one family and occasionally even in one individual. Formerly, hay-fever was regarded as due to "a predisposing—perhaps neurotic—idiosyncrasy, a resulting hyperesthesia" and "an exciting agent"—pollen in true hay-fever, unfavorable atmospheric conditions in so-called pseudohay-fever. Now, however, not only has stress been placed on the resemblance of the symptoms in hay-fever, asthma and allied conditions to some of those of active anaphylaxis (by Wolff-Eisner, Meltzer and others) but, as Koessler[1] says, it has been proved by experiment that hay-fever is a disease due to pollen protein sensitization. It has been shown also that asthma in certain cases may be precipitated by inhalation, by subcutaneous injection or by ingestion of the foreign protein to which the individual is sensitized, as in horse asthma or in patients who develop from their hay-fever true paroxysms of asthma.[2] In similar manner, certain forms at least of eczema, urticaria and angioneurotic edema have been determined to be forms of protein sensitization, and new methods of diagnosis and treatment are being worked out.[3] With this new point of view, the "predisposition" of former times is now "sensitization" or "allergy," and the exciting agent is the specific foreign protein, as pollens in hay-fever, and pollens, animal emanations, food or bacterial proteins in asthma, eczema, urticaria and angioneurotic edema.

The offending protein may be detected by cutaneous and ophthalmic tests with extracts of the suspected proteins. The tests are based on the fact that the cells may react to the protein involved when applied directly. While the significance of such tests has not yet been worked out completely, the results indicate that the diseases are indeed examples of allergy. This is true of hay-fever quite generally, of asthma also but with exceptions, and of certain forms of eczema, urticaria and angioneurotic edema, as found with increasing frequency. These allergic diseases appear to carry a definite inheritance factor, a positive family history being found in something like 50 per cent. of susceptible persons, as against 14 per cent. of normal persons. It has been claimed that the capacity for sensitization is transmitted nonspecifically as a mendelian dominant, specificity being acquired usually in a manner as yet ill understood through inhalation, ingestion or intradermal reception of foreign protein.

In a recent report on so-called horse asthma as well as asthma from other forms of sensitization, de Besche[4] describes the case of a physician that illustrates not only early onset of asthma and its association with hay-fever in the same person as well as in other members of the family, but also the induction of typical anaphylactic shock on the injection of antidiphtheria serum, followed for a time by an apparently complete desensitization. In this case as well as in others, specific eye and skin reactions were obtained with horse serum, the eye reaction being obtained by simply touching the conjunctiva with the finger, which had just touched a horse. When the patient's serum was injected into a guinea-pig, horse serum being injected a few hours later, anaphylactic shock resulted. In one case death—passive anaphylaxis—occurred. It is of interest to note that in the case of the physician, exposure to emanations from horses, injection of horse serum, and the ingestion of sausage containing horse meat all caused asthmatic attacks; this patient was sensitive also to rabbit and guinea-pig emanations as well as to rabbit serum. Other cases of asthma described are in many ways similar; but, as commonly observed, with variation in the age when the nature of the trouble was recognized as well as in the course and in the symptoms. In one patient, acute gastro-intestinal symptoms developed, corresponding to the so-called anaphylactic gastro-enteritis. It appears that not all persons subject to horse asthma are sensitive to horse serum, and that consequently the danger of injecting antitoxic serum is less than might seem to be the case at first glance; but the necessity of careful tests of all asthmatics before injecting serum for therapeutic purposes, now generally recognized, remains as obvious as ever. Among other instances of sensitiveness described by de Besche is one of hay-fever-like manifestations associated with pronounced acute gastro-intestinal disturbances caused by flowers, more particularly roses; whenever exposed for fifteen or twenty minutes to the odors of roses, this patient, a man, had colic and diarrhea at the same time as sneezing and running of the eyes. In some of the instances recorded, the sensitiveness appeared to increase with time. As stated, we do not understand fully how this abnormal sensitiveness develops, whether it is inborn or acquired. Bearing on this question, a case recorded by Walker[5] is of special interest: a woman, aged 20, who had not had asthma before, was injected with horse serum without any immediate ill effects; but two weeks later she began to have asthmatic attacks whenever in close contact with horses, and alcoholic extracts of horse dandruff gave a skin reaction. Here we have a definite instance of acquired sensitiveness.

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Treatment of these allergic diseases includes protective as well as curative measures. The protective treatment aims to exclude the offending protein from reaching the sensitive patient. It is illustrated well in the case of hay-fever, not only by the migration of hay-fever victims to regions that are free from the pollens concerned, but also by the elaborate campaign against hay-fever waged by the American Hay-Fever Prevention Association,[6] aided by various governmental agencies. Some large cities now limit by weed-cutting ordinances pollination of the grasses and weeds causing hay-fever, and New Orleans is said to have decreased by these means the vernal type of hay-fever by more than 50 per cent in one season. The varieties and distribution of plants bearing hay-fever pollen are being determined, and undoubtedly preventive work of this kind if continued and extended will result in great reduction of the suffering from hay-fever. Persons subject to horse asthma are especially liable to attacks in places where horses abound, and de Besche mentions instances of complete relief from all symptoms when such persons leave the city and go to sea.

At present, the only form of curative treatment that offers any promise of help is based on the principle of desensitization (antianaphylaxis, anergy), injections being given of the particular proteins to which the patient in question is abnormally sensitive, the dose being selected with a view to avoiding severe reactions, as determined by ophthalmic or cutaneous tests. The effects so far obtainable are not marked, and repeated injections are necessary. In hay-fever the treatment with extracts of pollen is begun several weeks before the usual onset, and continued at intervals during the season. The results in hay-fever seem to be encouraging; the drawbacks are lack of permanence in result and difficulties connected with dosage. In other forms of sensitiveness, the specific treatment is being made the subject of careful investigation.[3]

DEHYDRATED VEGETABLES

The conservation of certain types of foods, notably fruits and vegetables, by desiccation has been brought into public prominence by the propaganda of the United States Food Administration and other agencies for inculcating food-saving. The preservation feature of this program is quite clearly understood by most persons who have given attention to the subject. Less well appreciated are some of the other features of the dehydration plan, particularly the actual change in the composition of the products with respect to their water content. The removal of the water not only yields a desiccated product that is not very likely to be lost by spoilage and decay, but also does away with the great bulk of the material so that the possibility of economy in transportation is greatly enhanced. Saving in tonnage and cargo space is at times an item quite as important as the other advantage afforded by desiccated products, namely, availability in seasons when fresh supplies are not readily obtainable.

In commenting on dehydrated vegetables, during a recent address delivered before the College of Physicians in Philadelphia, Major Murlin[1] of the Food Division of the Surgeon-General's Office called attention to some of the advantages which such foods offer in war time. He reported that the quartermaster's department of the Army has begun to place orders for dehydrated vegetables such as potatoes, onions and carrots for the use of General Pershing's army. As yet the tonnage contracted for is not large, but in all probability in the near future dehydrated vegetables will become a staple in our army rations, as they have already become in the ration of the British army. Thousands of pounds of dehydrated vegetables are being prepared in Canada, some also in the United States, for the British army. By simply soaking in water and boiling in the same water, these vegetables are brought back to the condition of fresh vegetables so perfectly that very often they cannot be distinguished from the fresh vegetables themselves. According to Murlin, another advantage of such products is the very high saving of time in the company kitchen. Dehydrated vegetables put up in packages are ready for the kettle; this saves the work of one or two men a day.

Elsewhere in this issue Givens[2] has presented statistics that elucidate some of the actual consequences of desiccation. A series of analyses of dried vegetables, conducted at the Sheffield Laboratory of Physiological Chemistry in Yale University, show that the quantity of water lost by such foods as spinach, lettuce, carrots, potatoes and cabbage may range from 70 to 97 per cent. Thus an entire barrel of spinach becomes concentrated into a package weighing at most a few pounds. Incidentally, it is noted that some of the green edible parts contain not insignificant quantities of calcium, an essential element which is ordinarily derived most readily in abundance from milk and milk products. For example, Swiss chard and spinach may contain more than 1.25 per cent. of calcium: cabbage and lettuce may furnish more than 0.5 per cent. As the requirement of lime for an adult man has been placed at somewhat less than 0.5 gm. a day, the small contributions from liberal quantities of such green vegetables may not be negligible, provided they are physiologically available in these products. This remains for the most part to be ascertained by actual utilization experiments.

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Current Comment

VOCATIONAL REHABILITATION OF THE DISABLED SOLDIER

THE JOURNAL has frequently stated that the most important future work connected with the war is the rehabilitation and placement in a vocation of the disabled. It has stated that this work properly should come under the supervision and direction of the Surgeon-General of the Army or the Navy, as the case might be. Recently Senator Smith of Georgia introduced a bill which looked to the transference of some of this work to the Federal Board for Vocational Education. According to the original bill, this work, while theoretically under the supervision of the Surgeon-General, would in reality have been under the supervision of this Federal Board. This, of course, would have been a serious handicap to good work. As the bill passed the Senate, it was so modified as to make the measure a fairly satisfactory one. It must be recognized that an entire program which shall deal with the disabled soldier in an effective way must involve his medical and surgical treatment, whatever reeducation may be necessary, and his final placement or aftercare. While the Surgeon-General of the Army had facilities to do all of this work, and, in fact, had worked out a program, other federal agencies also were prepared to do part of the work supplementary to the medical and surgical treatment. The bill leaves the soldier, or sailor, under the entire authority of the War Department or Navy Department—that is, in the Medical Department of the Army or Navy—until discharged from the service. The Surgeon-General may deal with the soldier in an attempt to cure him, or as nearly so as the man's disabilities permit, without outside interference. The bill provides that no "vocational teaching shall be carried on in any of the hospitals until the medical authorities certify that the condition of the patient is such as to justify such teaching"; also that "the plan may be established between the War and the Navy Department and the Federal Board for vocational education whereby these departments will act in an advisory capacity with the board in the care of the health of the soldier after his discharge." Necessarily, if the program as outlined by the bill is to be carried out in a satisfactory manner, there must be hearty cooperation between the Federal Board and the Surgeon-Generals of the Army and of the Navy. There is no reason to suppose that this cooperation will not be entered into fully by these different interests, and to the ultimate, best advantage of the disabled soldier.

DOMINATION OF THE MEDICAL PROFESSION BY COMMERCIAL INTERESTS

Last week THE JOURNAL published a letter received by a physician in Milwaukee from a firm of lawyers representing the Farbwerke-Hoechst Company. In this communication the physician was threatened with suit if he published further unfavorable reports regarding that firm's preparation. Quoting from the attorneys' letter:

> "Mr. Metz directs us to inform you that the publication of this article and the statements therein were seriously damaging to the Farbwerke-Hoechst Company, and directs us to say further to you that he and the corporation will hold you personally responsible for any repetition, oral or written, of the same or of similar statements to the same effect."

We were under the impression that the time had passed when a proprietary medicine manufacturer would presume to threaten a physician for making an honest report of his results with any therapeutic agent. Such condition did exist once, before the Council on Pharmacy and Chemistry undertook its work. Now comes Mr. Metz to revive this relic of an historic but infamous period in the history of American proprietary medicine manufacturing. Even Mr. Vanderbilt regretted that he ever said "The public be d——." One of the elementary principles in the practice of medicine is that the individual physician shall let others know his results, whether good or bad, in any line of treatment. It is by such interchange of knowledge and experience that progress in medicine is possible. Yet Mr. Metz would interfere with the diffusion of such knowledge and experience when it applies to proprietary medicines. His legal threat against Dr. Sargent is "terrorism" applied to the medical profession.

DRUGLESS HEALING INCLUDED IN THE TERM "PRACTICE OF MEDICINE"

A decision handed down a few months ago[1] by the Supreme Court of Illinois will help to do away with the confusion resulting from the licensure of cult practitioners. Under the claim that they were "not practicing medicine," osteopaths, chiropractors, Eddyites, naprapaths, physcultopaths, neuropaths and other healers are claiming or have secured the legal right to practice with lower educational qualifications than are required of physicians. But their claims are no longer valid—at least in Illinois. This decision states that the term "medicine" is not limited to substances supposed to possess remedial properties, but also means "the healing art"—the science of preserving health and treating diseases, no matter whether medicinal substances are used or not. But the decision does not end there. It adds emphasis to the foregoing by the statement that any one engaged in the treatment of diseases for the purpose of curing them is a physician. The corollary is also true, therefore, that all who are practicing the healing art by whatever method should be required by law to possess the same educational qualifications. Incidentally, this decision specifies that any physician, regardless of the method of treatment followed, has the right to sign death certificates. This emphasizes all the more the necessity of adequate training for any one who has this authority. The objections that have been raised to the signing of death certificates by followers of the various cults has not been because of the particular form of treatment they emphasize, but because of their lack of a fundamental training in the essentials of medicine. Enforce the same qualifications alike for all who are legally authorized to treat the sick — the same as is done in practically every other country — and there will be no logical reason for restricting the practice of any one engaged in the healing art who, in the light of this decision, is a physician and is engaged in the practice of medicine.

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[1] Meaning of the Terms "Physician" and "Medicine," THE JOURNAL A. M. A., Oct. 27, 1917, p. 1465.

NURSES NEEDED BY THE RED CROSS

On June 10 the American Red Cross will initiate a campaign to secure 25,000 nurses for the United States Army and Navy. It should be emphasized that the nurses needed are those from regularly established training schools, who are registered to practice nursing — not the voluntary nurses' aides nor untrained or so-called "practical" nurses. There is already a severe strain on the supply of registered nurses. This will be an additional strain. For this country to supply 25,000 in addition to those already in the military service — between 10,000 and 12,000 — means that physicians and patients will have to get along with fewer nurses. The physician who assigns a trained nurse to a maternity case must now realize that his patient will be able to have this nurse for only a part of the usual time — perhaps only for the day of delivery and three or four days following, and must substitute untrained nursing assistance, if even this is necessary. In ordinary cases of illness the "practical" nurse is often as satisfactory as the thoroughly trained, registered nurse. Incidentally, this forced economy in the use of nurses may not, after all, be an unmixed evil. Many of us have become so accustomed to this trained assistance that we seem to feel that we cannot get along with any other kind. It is an illustration of the old saying that what was a luxury yesterday is a necessity today. We have come to regard a trained nurse as a necessity in illness, in which, twenty-five years ago, even such a luxury as a "practical" nurse was undreamed of. But this is looking at the nurse solely in her narrow field. In recent years she has developed into more than the doctor's assistant; she has become an important, and in some respects a necessary, aid in carrying on the social work that has developed during the last decade or two. It is as visiting nurses — among the poor, in our schools and in infant-welfare work — and as public health workers — it is here that this great demand on account of the war will be most felt, for here the demand for nurses had already become greater than the supply. Physicians should realize that they can do as much as, if not more than, any other class in encouraging young women of proper training, who seem fitted temperamentally and otherwise for this work, to undertake the training courses now so readily available. There are many who have some ambition in this regard and who, with a little encouragement, would enter on this training. In any event, for the time being it must be borne in mind that nurses are one of the great needs in winning the war, and that it is our duty as physicians to aid in supplying this need.

GASTRIC SECRETION IN FEVERS

Ordinary clinical observation is frequently sufficient to afford unmistakable evidence of defective alimentation in the course of febrile disease. Naturally, the stomach and its functions have received a great deal of attention because they are relatively easy to investigate. Observers agree that there are a diminished gastric secretion and a lowered acidity in fevers; but whether the factors involved in this outcome are partly or entirely of a nervous character, as some persons have believed, or whether some chemical agency in the work of the gastric glands is concerned has never been established. We may thus still ask, as one group of investigators have formulated the question, Does the fever or temperature elevation complex abolish the psychic factor, impair the function of the hormones that provoke the secretion, or depress the gastric cells directly? From recent experiments by Meyer, Cohen and Carlson[1] at the Hull Physiological Laboratory of the University of Chicago, an answer to such queries now seems possible. The experiments indicate, so far as studies on suitable animals are available to give an answer, that during fever gastric secretion is diminished in volume and in total and free acid. The percentage of chlorids is constant or only slightly reduced, and pepsin is relatively increased. The secretion is ropy and mucous in character. The discovery that gastrin, the specific hormone that promotes gastric secretion, can bring its effect about after subcutaneous injection, and under conditions in which psychic factors cannot come into play,[2] makes it possible to distinguish between such factors and chemical effects on the stomach in febrile conditions. Gastrin, which is now believed to exert a direct action on the cells of the gastric glands, will not induce a secretion of gastric juice during typical fever. Furthermore, it will not act during a condition of elevation of temperature brought about by excessive external heat. The fact that the latter, when sufficient to induce a temperature elevation of from 2 to 4 F., will cause the same changes in gastric juice as are produced by fever, points to the heat itself as the most prominent causal agency in the disorders of secretion induced by fever. The theory of the Chicago physiologists is that the most important feature in the alteration is a depression of the gland cells. These cell changes, they believe, are transitory in character, and are probably in the nature of a cloudy swelling. The further suggestion is made that, during fever, toxins are perhaps elaborated having a direct depressor action on the cells of the stomach so that they fail to react to the secretory nerve impulses and to the secretagogues. If this is true, a comparable inhibitory or depressive effect on other glandular cells may likewise be expected to occur and thus still further aggravate the alimentary difficulties of the febrile patient.

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[1] Meyer, Jacob; Cohen, S. J., and Carlson, A. J.: Contribution to the Physiology of the Stomach, XLVI, Gastric Secretion During Fever, Arch. Int. Med., March, 1918, p. 354.

[2] Keeton and Koch: Am. Jour. Physiol., 1915, 37, 481.

GESTATION AND LACTATION

It has been believed among the laity as well as by a few physicians that pregnancy and lactation are incompatible and that "the pregnant woman must wean her child because of the marked influence which pregnancy exerts on the composition of milk." If we seek for the origin and ask regarding the validity of this assumption, dependable facts are not easy to find. There are reports to the effect that children nursing pregnant mothers tend to exhibit symptoms of indigestion and impaired nutrition. These phenomena are attributed to the scanty flow of milk under the conditions stated and to a possible alteration in its quantitative make-up. In the case of cows, the problem here presented ought to be open to solution from an experimental standpoint, because nearly all of these dairy animals are bred at some stage of their lactation period. The studies of Palmer and Eckles[1] of the Department of Dairy Husbandry at the University of Missouri have led them to the conclusion that gestation does not exert any direct effect on the composition and properties of cow's milk, but that gestation may affect the composition indirectly by hastening the close of lactation, which is the important factor involved in the changes in the composition of milk as lactation advances. An elaborate series of analyses of the milk of two lactating women indicates, further, that under normal conditions gestation exerts no influence on the composition of mother's milk, but that it may greatly hasten the close of lactation with the changes in the composition of the milk which accompanies it if lactation is sufficiently advanced when the period of gestation begins. Despite the fact that disturbances in the health of the children nursed by these pregnant mothers were never noted, Palmer and Eckles frankly admit, in view of the limited data still available, that the whole question is worthy of more extended study, particularly with regard to the disturbances in the health of the child which have been mentioned as accompanying pregnancy in the case of the mother. They add that the variations in the composition of human milk, the factors that contribute to these variations, and the relation of these variations to the health and nutrition of the child have not received the attention they deserve. Similar information in regard to cow's milk is much more extensive at present. Many opinions regarding the extent of the variations to which the composition of cow's milk is subject, which were formerly held by many persons, have been disproved, but are still regarded as being true for human milk. No doubt, Palmer and Eckles conclude, many of these opinions are equally unfounded for human milk; but the experimental data are not available to disprove them.

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[1] Palmer, L. S., and Eckles, C. H.: The Influence of the Stage of Gestation on the Composition and Properties of Milk, Jour. Dairy Sc., 1917, **1**, 185.

IS SALICYLIC ACID EXCRETED AS SALICYLURIC ACID?

When benzoic acid is introduced into the organism it is excreted in combination with glycocoll as hippuric acid (benzoyl glycocoll). This well established fact has long been cited as an evidence of the synthetic capacities of the body, and further as an illustration of its detoxicating devices; for, by conversion to hippuric acid, benzoic acid becomes comparatively inert to living tissues. Many grams of benzoates — more than an ounce — can easily be converted in this way. An analogous reaction has also been believed to occur when the closely related hydroxybenzoic acid, salicylic acid, finds its way into the circulation. The salicyluric acid (salicyl-glycocoll) is said to occur in urine to the extent of about 80 per cent. of excreted salicyl in man after the administration of salicylates. Hanzlik,[1] of the Pharmacologic Laboratory of Western Reserve University, has found, however, that the methods which have been used heretofore for isolating what was supposed to be salicyluric acid are inadequate. Even when applied to salicyl urines they do not yield any notable quantity of a pure product of the character expected. From this it accordingly appears improbable, as Hanzlik argues, that salicylates are conjugated with glycocoll and converted into salicyluric acid in the human organism. The products hitherto interpreted as salicyluric acid have presumably been more or less impure salicylic acid that had been imperfectly separated in the process of isolation. These few conclusions do something more than teach us that the salicylates are excreted, in good part at least, unchanged. They warn against the folly of transmitting from one edition of a textbook to its successors, through an entire generation, reputed discoveries based on slender evidence.

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[1] Hanzlik, P. J.: The Salicylates, IX, The Question of Salicyluric Acid in Salicyl Urines, Jour. Pharmacol. and Exper. Therap., 1917, **10**, 461.

Slicing the Patella.—H. Spitzy recommends sawing the patella through into halves, nearly parallel to the surface, to obtain ample access to the joint. By this means the ligament attached to the sawed off upper half of the patella is left undisturbed, while the quadriceps tendon attached to the lower half is also left unmolested, and yet the two halves can be drawn apart, leaving the joint amply exposed below. When the operation is completed, the halves of the patella are superposed and sutured together with a circular suture embracing both capsule and periosteum. The *Correspondenz-Blatt* adds in its summary from the original article in the *Münchener medizinische Wochenschrift*, No. 35, 1917, that Spitzy has applied this method in two cases with most excellent results, and has also used the same technic for the elbow, sawing off a slanting slice of the olecranon without molesting the triceps tendon.

Association News

THE CHICAGO SESSION

PROGRAM OF MEETINGS

The annual session of the American Medical Association convenes Monday, June 10, with the opening meeting of the House of Delegates at 10 a. m. at the home of the Association at 535 North Dearborn Street. Meetings of the House of Delegates will continue throughout Monday and Tuesday. The General Meeting which constitutes the opening exercises of the Scientific Assembly will be held at 8:15 p. m., Tuesday, June 11. The various sections of the Scientific Assembly will meet Wednesday, June 12, at 9 a. m., continuing throughout Wednesday. Practically all of the sections will combine on Thursday in the meetings of the Section on Miscellaneous Topics in the Auditorium Theater, beginning at 9 a. m. This meeting will be devoted to consideration of reconstruction and rehabilitation of the disabled soldiers. The Scientific Assembly will continue throughout Friday for most of the sections. On Wednesday evening, June 12, at 8:30, the military medical meeting takes place in the Medinah Temple. At this meeting the speakers will be representatives of the Medical Corps of the allied nations. On Thursday evening at 8:30 a patriotic meeting will be held in the Auditorium Theater. There will also be meetings devoted to consideration of the relations of physicians to the selective service to be held Thursday afternoon and Friday morning at the Studebaker Theater. The program of these meetings was published last week.

The registration, scientific and commercial exhibits will be open from 8:30 a. m. until 5:30 p. m., Monday, Tuesday, Wednesday and Thursday, June 10 to 13; and from 8:30 a. m. until 12 noon on Friday, June 14.

THE BRITISH DELEGATES TO THE ANNUAL SESSION

Sir James Mackenzie, Sir Arbuthnot Lane and Col. Herbert Bruce, delegates from the British Medical Association to the meeting of the American Medical Association, arrived in New York City on May 31. They were met and welcomed by Dr. Wendell C. Phillips, member of the Board of Trustees, and by Dr. Alexander Lambert, chairman of the Judicial Council in behalf of the American Medical Association. On June 2 they left for Washington, D. C., where they remained until June 4 when they departed for Cincinnati to attend the annual session of the American Surgical Association. They will arrive in Chicago, Sunday, June 9, for the annual session of the American Medical Association from June 10 to 14, and will be at the Blackstone Hotel.

MILITARY MEDICAL HEADQUARTERS

Room L on the mezzanine floor of the Hotel Sherman, adjoining the Scientific Exhibit, has been reserved as headquarters of the Medical Department of the Army. A representative from the Medical Department of the Army will be at this room every day, commencing Tuesday, prepared to give information concerning the service. Application blanks, circulars of information, etc., can be had there; and arrangements can be made for the examination of those who desire to apply for commission in the Medical Reserve Corps.

LADIES' ENTERTAINMENT

In addition to the announcements already made, arrangements have been made for a trip to the Great Lakes Training Station on Wednesday afternoon. The occasion will be the dedication of the new Red Cross building at the training station. The train will leave the Northwestern Station at 1:30. Members of the Women's Committee will be at this station to accompany the visiting ladies to the Great Lakes Training Station, where they will be guests of the training station.

MEETINGS DURING THE ANNUAL SESSION

Chicago Pediatric and Infant Welfare Society

A joint meeting of the Chicago Pediatric and Infant Welfare Societies will be held June 10 at the City Club of Chicago, 315 Plymouth Court. Addresses will be given by Dr. William Palmer Lucas on "Child Welfare Work in France" and by Dr. Paul Armand DeLille on "The Infant Mortality Situation in France."

Chicago Ophthalmological Society Banquet

The Chicago Ophthalmological Society will give a banquet and entertainment in honor of the officers of the Section on Ophthalmology of the American Medical Association in the East Room of the Hotel La Salle, Chicago, at 6:30 o'clock, Tuesday evening, June 11. Tickets for the banquet may be procured from the secretary of the Chicago Ophthalmological Society, Dr. Alfred N. Murray.

Medical Mobilization and the War

An English Appreciation of American M. R. C. Officers

Colonel Furbush, of the Surgeon-General's Office, sends the following excerpts from a letter which he received from Lieut.-Gen. T. H. Goodwin, Director-General of the British Medical Service. The letter is dated May 8:

"This is only a short line as I am extremely busy. I would like to give you an extract from a letter which I have just had from G. H. Q. in France. It runs as follows:

> 'The casualties amongst Medical Officers during the week have been 23, of whom 3 were killed. 5 of the casualties were amongst Medical Officers of the U. S. A. attached to British battalions or field ambulances, 4 being "gas" casualties and one "missing" casualty. The work of these U. S. A. Medical Officers deserves special recognition. They have been invaluable and have worked under the most trying conditions and with great gallantry.'

"I thought you would like to know this, and I should be much obliged if you would show it to the Director-General. You are, of course, entirely at liberty to make it known in whatever way you wish, in fact, I should be glad if you would do so for I feel strongly how much we owe to your country, and I should like your people to know how well your Medical Officers are doing. . . ."

General—then Colonel—Goodwin, it will be remembered, was in this country for over a year, and a large number of our readers will have personal remembrance of him.

It is gratifying to read the message General Goodwin sends. It must be borne in mind that the letter from which General Goodwin sends the quotation was not written with the idea that it would be presented to American readers, but for "home consumption."

Moral Welfare of Military Establishments to Be Further Safeguarded

The Secretary of War was authorized and directed by the provisions of an act to authorize the President to increase temporarily the Military Establishment of the United States, approved, May 18, 1917, to do during the present war everything he might deem necessary to suppress and prevent the keeping or setting up of houses of ill fame, brothels, or bawdy houses in proximity to military stations, and certain penalties were prescribed for the violation of such rules as the Secretary might promulgate to carry into effect the provisions of the act. It has been found necessary, however, to seek further legislation on the subject, and by a bill passed by the United States Senate on May 17, it is provided that during the present emergency it shall be unlawful, within such distance of any military establishment as the Secretary of War shall determine to be needful, to engage in prostitution, or to aid or abet prostitution, or to procure or solicit for purposes of prostitution; or to keep or set up a house of ill fame, or bawdy house; or to receive any person for purposes of lewdness, assignation, or prostitution into any vehicle, conveyance, place, structure, or building, or to permit any person to remain for purposes of prostitution in any conveyance, place, structure, or building. Punishment for violation of this law is by a fine of not more than $1,000, or by imprisonment for not more than one year, or by both; and persons subject to military law may be punished as provided in the Articles of War. This bill now goes to the House of Representatives for consideration.

Personnel of the Medical Department

For the week ending May 31, 1918, the personnel of the Medical Department of the Army included:

Medical Corps: 868, including 1 major-general, 65 colonels, 110 lieutenant-colonels, 298 majors and 394 lieutenants.

Medical Reserve Corps: 19,226, including 1,388 majors, 4,983 captains and 12,855 lieutenants. On active duty: 17,343, including 1,320 majors, 4,727 captains and 11,296 lieutenants.

Medical Corps, National Guard: 1,199, including 18 lieutenant-colonels, 249 majors, 150 captains and 782 lieutenants.

Medical Corps, National Army: 151, including 5 brigadier-generals, 16 colonels, 122 lieutenant-colonels and 8 majors.

The discharges to date are:

	Number	
Causes	M.R.C.	M.C.N.G.
Physical disability	670	52
Inaptitude	262	20
Other branches of service	209	72
Resignations	132	33
Domestic troubles	59	0
Needed by community	50	0
Deaths	80	5
Dismissals	10	3
Duty completed	1	0
No reasons given	14	0
	1,767	185

New Army Appropriations

In the new Army appropriation bill, reported by the House Committee on Military Affairs on May 25, the amount indicated for the medical and hospital department of the Army is $267,408,948. In addition there is included for construction and repair of hospitals, $60,000,000; for hospital care in the Canal Zone, $60,000; for the Army Medical museum and Library, $25,000. Among the large items in the bill are those for pay of the Army, $1,587,318,495.14; for transportation of the Army and supplies, $1,532,606,103, and for clothing and camp garrison equipage, $1,230,190,089.

Federal Control of Venereal Diseases Proposed

Action by the United States government to prevent the spread of venereal diseases is proposed in two bills recently introduced into Congress, going far beyond anything heretofore contemplated. Both bills are carefully drawn and bear internal evidence of being the results of careful studies of the situation in so far as concerns the possibilities of federal control. One bill proposes direct action by the Treasury Department, through the United States Public Health Service. The other provides for the creation of an Interdepartmental Social Hygiene Board, to operate primarily through subsidies granted by it to state boards and departments of health, and to universities, colleges, and other suitable institutions.

The bill proposing direct action through the Treasury Department, operating through the Bureau of Public Health, creates in that bureau a division of public health, under direction of an assistant Surgeon-General, and imposes on the bureau the following duties:

(*a*) To study, investigate and conduct research work into the cause, prevention and treatment of venereal diseases; (*b*) to construct, acquire, purchase, lease or otherwise obtain internment hospitals, and to equip, manage, conduct and operate the same; (*c*) to administer and apply medical treatment to persons afflicted with venereal diseases while in said internment hospitals, and to issue orders or discharge therefrom upon cure; (*d*) to cause the arrest and prosecution of immoral persons afflicted with venereal diseases who go or attempt to go from one state, district or insular possession of the United States to another, and to cause the arrest and prosecution of persons who aid, assist or connive at the same; (*e*) to receive at such internment hospitals and to have authority and custody thereof for the purpose of examination or medical observation or treatment, all immoral persons afflicted or thought to be afflicted with venereal diseases, who are delivered to or turned over to the officer in charge of any such internment hospital by any state, county, city or town board of health or health department, or by any civil or military court, sheriff, police or peace officer, or by the military or naval authorities of the United States; (*f*) to detain for purposes of medical observation or examination and treatment any immoral person going or attempting to go from one political division to another, and to commit any such person afflicted with venereal disease to an internment hospital, and to administer medical treatment to such person, and to have custody of him; and (*g*) to cooperate with state, county, city and town boards or departments of health in the prevention and treatment and cure of venereal diseases, and to prevent the spread thereof.

The bill makes it unlawful for any immoral person afflicted with syphilis, gonorrhea, chancroid or other venereal disease capable of being communicated from one person to another to go or attempt to go from one state, district or insular possession of the United States to another, and provides a penalty of a fine not less than $500 nor more than $1,000, or imprisonment for not less than six months nor more than one year, or by both fine and imprisonment. The term "immoral person" is defined to include any bawd, prostitute or female who practices sexual intercourse out of wedlock for or without hire or thing of value; or any man who consorts with, associates or companions with any immoral woman, or who loiters about or frequents any bawdy house or brothel, or any bawd or any lewd or licentious person.

The second of the bills referred to above creates a board to be known as the Interdepartmental Social Hygiene Board, to consist of the Secretary of War, the Secretary of the Navy, and the Secretary of the Treasury, "as ex officio members," and of the Surgeon-General of the Army, the Surgeon-General of the Navy, and the Surgeon-General of the Public Health Service, or of persons whom the secretaries of the Army, the Navy, and the Treasury may respectively designate; and it empowers the board

(*a*) To recommend rules and regulations for the expenditure of moneys allotted to the states under authority of the act; (*b*) to select institutions and to fix allotments to each institution to whom money may be allotted under the act; and (*c*) to recommend to the Secretary of the Treasury, the Secretary of War and the Secretary of the Navy such general measures as will promote correlation and efficiency in carrying out the purposes of the act by their respective departments. To carry out the provisions of the act recited above, "to be expended under the joint directions of the Secretary of War and the Secretary of the Navy," an appropriation of one million dollars is recommended, to be in addition to other appropriations made by the respective states, and in addition to funds received from any other sources of a more general character. An additional million dollars is recommended to be paid to the states for the use of their respective boards or departments of health in the prevention, treatment and control of venereal diseases, to be allotted to the states in accordance with the rules and regulations prescribed by the Secretary of the Treasury, allotments after the year ending June 30, 1919, to be conditioned upon the appropriation of like amounts by the states. An appropriation of one hundred thousand dollars is called for, to be paid to such universities, colleges or other suitable institutions as in the judgment of the Interdepartmental Social Hygiene Board are qualified for scientific research for the purpose of discovering more effective medical measures for the prevention and treatment of venereal diseases; and an additional appropriation of three hundred thousand dollars is proposed, to be paid to similar institutions, for the purpose of discovering and developing more effective educational measures in the prevention of venereal diseases and for the purpose of sociologic and psychologic research related thereto.

Both bills have been referred to appropriate committees.

Nonphysical Standards for Flyers

Asserting that the establishment of a difficult and inelastic schedule of physical requirements for candidates for the aviation service is wrong in principle and has deprived the service of many good flyers, Parsons in the *U. S. Naval Bulletin* (April, 1918) gives an account of tests now applied in the selection of aviators which tend toward the establishment of what he calls "nonphysical standards." He says that formerly "We thought that to become a successful aeronaut was something that could be attained by the one in a thousand, the true hero, endowed with almost miraculous skill and daring. It was because this view was generally held, perhaps, that we adopted such a high set of physical standards in our selection of aviation candidates." Experience has taught that almost any young man with a reasonable amount of common sense, the usual amount of "nerve" possessed by most young Americans, and a keen desire to be an aviator, can become a good flyer in a very few hours. It is questionable, he says, whether a great deal more actual skill is required in learning to fly than in learning to drive an automobile. The most important qualities are "nerve" and lack of fear of the air. Good physical health is of course desirable, but he calls attention to the absurdity of rejecting men, as has been done in instances which he mentions, for lacking a quarter inch of the scheduled figure in chest expansion, or for having flat feet, which he does not use for air navigation purposes, or for being slightly deaf, when the roar of the plane engines while in the air makes it impossible for one with the most acute hearing to hear anything else. The Navy has already rejected hundreds of applicants because of trivial minor defects, most of whom, it is believed, could become successful aviators. In fact, many of them were accepted in the Canadian Royal Flying Corps where they have made good.

Many cases of "perfect health" men cannot learn to fly, and many cases of "not perfect health" men have become famous flyers, so that mere physical standards are far from infallible. It requires "something else" to make a flyer, and in determining what that is flight instructors have been appealed to. While it is difficult to determine and cannot be determined definitely what that "something else" is, the instructors after discussion have unanimously agreed that a flyer should be cool under strain, be dependable at the critical moment, be mentally and physically alert, lack any inherent fear of the air, and be persistent and persevering in the ambition to become a successful aviator. It is also believed that he should be intelligent, athletic and endowed with good muscular coordination, possessed of a keen sense of equilibrium and be a good judge of velocity and distances. There was no agreement as to whether extreme stolidity or great nervous energy was preferable in an aviator, expertness being found in both temperamental classes. Purely physical qualifications were not given much weight, even the question of exceptional vision. Whereas one naval examiner was much troubled because a candidate had vision of 16/20 in one eye, it is known that one of the greatest British flyers has but 4/20 vision (uncorrected) in one eye and not a great deal more in the other. The instructors were all agreed that a skilful motorcyclist or automobile driver always makes a good aviator. Parsons describes in more or less detail tests devised by Drs. L. E. Troland and H. E. Burtt of Harvard Psychological Laboratory for testing candidates for aviation as to "coolness," alertness, muscular coordination, judgments of distances, powers of observation, unusual fear of flying, equilibrium reaction time, intelligence, etc.

For Vocational Rehabilitation of Soldiers and Sailors

Senator Hoke Smith's bill for the vocational rehabilitation of soldiers and sailors has passed the Senate without a dissenting vote, after some amendments desired by the Surgeon-General. It is now in the House. As it passed the Senate the bill provides that every person who is disabled under circumstances entitling him after discharge from the military or naval forces to compensation under the War Risk Insurance law, and who after his discharge, in the opinion of a board created for the purpose, is unable to carry on a gainful occupation, or to resume his former occupation, or to enter on some other occupation successfully, shall, when feasible, be furnished a course in vocational rehabilitation as prescribed by the board. The disabled person during the time of his rehabilitation and instruction will be paid monthly an amount equal to the amount of his last pay while in active service. Instruction is to be made available without cost. Section 4 relates to the powers of the board in preparing and equipping itself for such instruction and carrying on the courses, and for making all regulations, etc., necessary for the proper carrying out of the purposes of the bill. Section 5 relates to the duty of the board to make studies, investigations and reports regarding vocational rehabilitation and the placement of persons rehabilitated in suitable gainful occupations, which studies, investigations and reports and their carrying out may be done and made in cooperation with other departments and bureaus of the government or with such other public and private agencies as may be deemed advisable.

Section 6 provides that all medical and surgical or other work or treatment necessary to give functional and mental restoration to disabled persons prior to their discharge from the naval or military forces shall be under the control of the War Department and the Navy Department, respectively. After the men are discharged from the military or naval service the training will be under the Federal Board for Vocational Education. This board already starts and has in its personnel the secretaries of commerce, labor and agriculture and the commissioner of education, with three additional men not in official position. The War and Navy Departments are to continue to act in an advisory capacity to the board, and while still in the service the soldiers and sailors will be under the authority of the War and Navy Departments, and the Surgeon-General may deal with them, in his attempt to cure them from their disabilities, without interference from any one.

Section 7 empowers the board to receive gifts and donations from public or private sources which shall be paid into the treasury to constitute a special fund to carry out the purposes of the act. Section 8 provides for appropriations to carry out the purposes of the bill and the manner in which the appropriations shall be apportioned to those purposes.

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending May 24, 1918

1. ANNUAL ADMISSION RATE PER 1,000 (disease only):

		Last Week
All Troops	1,068.1	1,106.2
Divisional Camps	764.5	736.
Cantonments	1,200.9	1,227.2
Departmental and Other Troops	1,109.1	1,177.3

2. NONEFFECTIVE RATE PER 1,000 ON DAY REPORT:

All Troops	39.8	39.5
Divisional Camps	33.4	33.
Cantonments	46.4	44.7
Departmental and Other Troops	35.8	38.4

3. ANNUAL DEATH RATE PER 1,000 (disease only):

All Troops	5.7	6.3
Divisional Camps	1.9	3.1
Cantonments	9.0	9.9
Departmental and Other Troops	4.1	4.2

NEW CASES OF SPECIAL DISEASES REPORTED DURING THE WEEK ENDING MAY 24, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal		Measles	Meningitis	Scarlet Fever	Deaths	Annual Admission Rate per 1,000 (Disease Only)	Noneffective per 1,000
				Total	New Infections						
Beauregard	5	8	23	40	5	1	..	..	0	1,166.4	48.8
Bowie	4	..	2	24	22	...	..	..	0	889.4	30.8
Cody	5	..	..	6	...	...	..	..	1	531.3	23.2
Doniphan	...	1	..	12	...	...	..	..	0	2,4[illegible].3	59.1
Fremont	6	..	..	34	19	13	..	3	3	1,030.2	34.6
Greene	...	..	..	4	4	8	..	..	1	516.4	20.1
Hancock	...	..	..	51	...	...	1	..	0	1,071.9	55.4
Kearny	2	..	1	2	...	2	1	..	3	533.0	27.4
Logan	...	..	..	13	1	2	..	..	0	299.3	26.6
MacArthur	...	..	..	...	...	...	..	..	0	723.8	36.4
McClellan	1	..	1	20	14	3	..	..	0	546.8	27.6
Sevier	10	..	..	33	11	4	..	..	2	498.4	37.4
Shelby	1	6	3	12	4	1	1	..	3	1,020.9	41.2
Sheridan	2	..	4	35	14	...	..	..	1	514.4	20.0
Wadsworth	1	..	..	83	...	15	..	1	0	1,153.5	34.9
Wheeler	2	..	..	21	6	...	..	..	1	572.0	35.9
Custer	10	..	..	117	4	1	..	..	4	673.4	24.4
Devens	37	..	1	28	6	25	..	..	4	661.1	38.0
Dix	3	2	1	63	4	9	1	4	2	893.7	39.2
Dodge	33	..	..	97	...	10	1	13	12	1,261.9	78.0
Funston	13	..	1	176	63	5	3	3	3	1,031.1	50.7
Gordon	24	..	2	97	2	41	2	..	14	2,286.5	76.3
Grant	5	..	..	14	...	5	2	8	4	437.7	23.9
Jackson	17	1	2	81	...	30	2	..	15	3,500.9	64.6
J. E. Johnston	5	..	1	43	23	5	..	..	3	869.9	37.0
A. A. Humphreys	11	..	..	11	7	11	1	..	2	909.1	21.8
Lee	...	..	1	123	1	11	..	..	2	1,082.7	61.7
Lewis	13	..	..	58	4	7	..	3	1	777.7	32.5
Meade	6	..	..	10	6	4	1	1	2	982.5	31.5
Pike	10	..	3	71	14	17	3	..	13	1,551.4	63.6
Sherman	2	..	..	81	5	14	1	5	4	1,014.6	43.5
Taylor	11	..	..	4	...	14	..	..	3	911.9	56.0
Travis	33	1	5	50	3	20	..	1	11	2,315.1	49.0
Upton	8	..	..	142	35	...	..	2	2	813.8	40.7
Northeastern Dept.	...	..	..	11	1	3	1	..	0	692.8	27.2
Eastern Dept.	...	..	1	22	12	4	..	..	3	871.8	28.9
Southeastern Dept.	1	..	..	62	35	9	..	..	3	998.1	31.9
Central Dept.	3	..	..	24	10	8	..	4	3	1,226.2	62.0
Southern Dept.	19	3	3	156	37	70	1	11	6	1,166.6	33.7
Western Dept.	...	..	..	31	7	12	..	3	1	722.2	23.2
Aviation S. C.	9	..	3	124	...	14	2	4	11	1,131.5	31.4
Alcatraz, D. B.	...	..	..	1	...	...	..	..	0	478.5	18.4
Columbus Bks.	1	..	..	8	2	...	..	1	0	613.0	21.1
Depot, Prov. Corps and Army Troops	1	..	3	4	...	...	..	..	1	1,174.9	46.6
Edgewood - Aberdeen	...	..	..	...	...	1	..	..	0	306.5	11.1
El Paso	...	1	..	2	1	...	..	..	0	596.5	19.1
Hoboken	7	..	..	165	11	12	..	3	4	979.2	56.3
Holabird	...	..	..	3	0	...	..	..	0	610.8	3.9
Jefferson Bks.	5	..	1	188	3	5	..	..	0	2,366.4	86.1
Leavenworth, D.B.	1	..	..	...	...	...	..	1	2	1,166.2	37.4
Fort Logan	1	..	..	5	...	...	..	3	0	1,233.3	70.8
Fort McDowell	2	..	..	43	...	1	..	..	0	2,437.5	86.2
Newport News	10	..	2	99	34	8	..	1	5	890.1	43.1
Raritan	...	..	..	...	...	...	..	..	0	480.6	27.7
Fort Slocum	2	..	..	26	...	1	..	..	0	2,311.3	41.4
Springfield Armory	...	..	..	...	...	...	..	..	0	276.6	21.3
Fort Thomas	1	..	..	17	...	8	..	..	1	1,353.7	23.4
Watervleit	...	..	..	...	...	...	..	..	0	536.0	51.6
West Point	...	..	..	2	...	...	..	..	0	801.4	11.7
Natl. Guard Depts.	...	..	..	15	7	2	..	1	1	......	....
Natl. Army Depts.	9	1	1	481	158	20	..	8	4	......	....
Total	352	24	65	3,145	595	456	24	81	161	1,068.1	[illegible]

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending May 24, 1918	Departmental and Other Troops, Week Ending May 24, 1918	Divisional Camps, Week Ending May 24, 1918	Cantonments, Week Ending May 24, 1918	Expeditionary Forces, Week Ending May 16, 1918
Pneumonia	14.4	8.5	6.9	23.3	12.8
Dysentery	0.98	0.6	2.0	0.4	0.3
Malaria	2.66	1.6	6.0	1.6	1.0
Venereal	129.0	176.2	69.0	123.1	87.8
Paratyphoid	0.0	0.0	0.0	0.0	0 0
Typhoid	0.1	0.1	0.0	0.2	0.0
Measles	18.27	21.0	8.7	21.2	12.3
Meningitis	0.48	0.4	0.5	1.6	1.4
Scarlet fever	3.4	4.7	0.7	0.38	5.7

ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

To Camp Bowie, Fort Worth, Tex., as assistant to camp surgeon, from Camp Sherman, Major JOHN A. BURKET.

To Camp Crane, Allentown, Pa., for duty, from the Surgeon-General's Office, Major STEPHEN H. SMITH; from Walter Reed General Hospital, Major EDGAR A. BOCOCK, Lieut. PAUL E. McNABB.

To Camp Custer, Battle Creek, Mich., as assistant to camp surgeon, from Biltmore, Major EDWARD A. NOYES.

To Camp Devens, Ayer, Mass., for sanitary inspection, and on completion *to his proper station*, Col. HOWARD DEANE C. HOWARD. Base hospital, from the Surgeon-General's Office, Lieut.-Col. LEARTUS J. OWEN. As assistant to camp surgeon, from Fort McHenry, Major HARRY R. BEERY.

To Camp Lee, Petersburg, Va., for sanitary inspection, and on completion *to his proper station*, Col. ALBERT H. TRUBY. *To Camp Lee*, Petersburg, Va., *Camp Wadsworth*, Spartanburg, and *Camp Sevier*, Greenville, S. C., *Camp Gordon*, Atlanta, *Camp Wheeler*, Macon, and *Camp Hancock*, Augusta, Ga., for duty, and on completion *to his proper station*, Lieut.-Col. EARL H. BRANS.

To Camp Meade, Annapolis Junction, Md., for temporary duty, from Camp Wheeler, Lieut.-Col. GEORGE F. KEENAN.

To Camp Pike, Little Rock, Ark., as assistant to the camp surgeon, from Columbus Barracks, Major GEORGE D. CHUNN.

To Camp Sherman, Chillicothe, Ohio, for temporary duty, from Camp Dix, Lieut.-Col. SAMUEL S. CREIGHTON. *To Camp Sherman*, Chillicothe, Ohio, *Camp Zachary Taylor*, Louisville, Ky., *Camp McClellan*, Anniston, and *Camp Sheridan*, Montgomery, Ala., *Camp Gordon*, Atlanta, *Camp Wheeler*, Macon, and *Camp Hancock*, Augusta, Ga., *Camp Sevier*, Greenville, and *Camp Wadsworth*, Spartanburg, S. C., for sanitary inspection, and on completion *to his proper station*, Lieut.-Col. FRANK W. WEED.

To Camp Travis, Fort Sam Houston, *Camp Bowie*, Fort Worth, *Camp MacArthur*, Waco, and *Camp Logan*, Houston, Tex., *Camp Beauregard*, Alexandria, La., and *Camp Shelby*, Hattiesburg, Miss., for sanitary inspection, and on completion *to his proper station*, from Fort Sam Houston, Col. WILLIAM F. LEWIS.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Camp Sevier, Lieut.-Col. CONDON C. McCORNACK.

To Camp Zachary Taylor, Louisville, Ky., as assistant to camp surgeon, from Columbus Barracks, Major HARRY L. ARNOLD.

To Cape May, N. J., for duty, and on completion *to his proper station*, Col. WALTER R. PARKER.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to his proper station*, from Camp Custer, Lieut. JOHN E. KILEY; from Camp Dodge, Lieut. GEORGE W. SNYDER; from Camp Grant, Lieut. ALLEN R. HOWARD.

To Fort Leavenworth, Kansas, for duty, from Army Medical School, Lieut. WILLIAM S. McCANN.

To Fort Oglethorpe for duty, and on completion *to his proper station*, Col. CLAUDE K. MORGAN.

To Mineola, L. I., N. Y., for duty, and on completion *to his proper station*, Col. THEODORE C. LYSTER.

To New Haven, Conn., for duty, and on completion *to Washington, D. C.*, Lieut.-Col. CHARLES F. CRAIG.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to their proper stations* from Camp Shelby, Capts. DAVID L. HILL, DON McCLELLAND, OTIS McQUOWN, Lieuts. FRED E. HICKSON, DORSEY M. HINES, RODNEY N. TROUTMAN, ALLEN H. WALKER, ADRIAL C. WEAKLEY.

To New York City, for duty, and on completion *to his proper station*, Lieut.-Col. JAMES BORDLEY. Bellevue Hospital, for instruction, and on completion *to his proper station*, from Camp Meade, Lieuts. CEDRIC E. FILKINS, ROY T. HASKELL, JOHN C. WOODLAND; from Camp Sheridan Capt. MORSE F. OSBORN, Lieuts. FRED L. EYESTONE, GUY G. GIFFEN, MATHEW C. HUUTER, EDWARD J. KENNEDY, P. C. PENNINGTON, EDWARD E. SMITH, FOR-REST R. STEWART; from Camp Wheeler, Majors CORNELIUS F. HOLTON, WILLIAM C. MILES, Capt. ROBERT B. BEARD.

To Philadelphia, Pa., for duty, and on completion *to his proper station*, Col. REUBEN B. MILLER.

To Pittsburgh, Pa., Carnegie Bldg., for instruction and on completion *to their proper stations* from Camp Beauregard, Lieuts. RECTOR P. SHEETS, ASA C. WATSON.

To Plattsburg Barracks, N. Y., for inspection, and on completion *to his proper station*, from Fort Porter, Lieut.-Col. THOMAS D. WOODSON.

To Rockefeller Institute for duty, and on completion *to Washington, D. C.*, Major CARRALL G. BULL.

The following order has been revoked: *To Edgewood, Md.*, as camp surgeon, from San Francisco, Major LEO C. MUDD.

ORDERS TO OFFICERS OF MEDICAL RESERVE CORPS

Alabama

To Camp A. A. Humphreys, Accotink, Va., for duty, and on completion *to Camp Meade*, Lieut. BURTON F. AUSTIN, Mobile.

To Camp Crane, Allentown, Pa., base hospital, from Fort Logan, H. Roots, Lieut. CLAUDE C. McCLEAN, Birmingham.

To Camp Hancock, Augusta, Ga., base hospital, Capt. WILLIAM G. THIGPEN, Montgomery.

To Camp Jackson, Columbia, S. C., base hospital, Lieut. JOHN D. DURDEN, Montgomery.

To Camp Lee, Petersburg, Va., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. JOSEPH W. HUGHES, Birmingham.

To Camp Meade, Annapolis Junction, Md., base hospital, Lieut. MERCER HOWE, Elba.

To Camp Pike, Little Rock, Ark., as a member of the board examining the command for tuberculosis, from Fort Riley, Lieut. LLEWELLYN H. LEDBETTER, Goodwater.

To Fort Oglethorpe for instruction, Capt. E. LAURENCE SCOTT, Greenville.

To Hoboken, N. J., for duty, from Camp Dix, Capt., GEORGE C. KILPATRICK, Bayou Labatre.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to his proper station*, from Camp Pike, Lieut. SOLON W. WRIGHT, Bessemer.

To Pittsburgh, Pa., Carnegie Institute of Technology, for instruction, and on completion *to his proper station*, from Fort Oglethorpe, Lieut. HENRY G. WADDELL, Dadeville.

To Riverside, Calif., Signal Corps Aviation School, for duty, from Arcadia, Lieut. GUY E. STEWART, Attalla.

Arizona

To Fort Des Moines, Ia., base hospital, Capts. ALBERT L. GUSTETTER, Nogales; JOEL L. BUTLER, Tuscon.

To Fort Riley for instruction, Lieut. CHARLES L. HATHAWAY, Winslow.

To Lake Charles, La., S. C. A. School, for duty, Capt. EDWARD W. ADAMSON, Douglas.

To report by wire to the commanding general, Southern Department, for duty, Lieut. RICHARD McC. FRANCIS, Williams.

Arkansas

To Camp Crane, Allentown, Pa., base hospital, from Dansville, N. Y., Lieut. CARL S. BUNGART, Fort Smith.

To Camp Pike, Little Rock, Ark., base hospital, from Jefferson Barracks, Lieut. NOLIE MUMEY, Little Rock.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to Camp Logan*, Houston, Texas, base hospital, Lieut. JOHN L. SMILEY, Siloam Springs.

To Fort Thomas, Ky., for temporary duty, Capt. J. WILLIAM SCALES, Pine Bluff.

To Hoboken, N. J., for duty, from Camp Sevier, Lieut. JAMES W. BUTTS, Helena.

To New Orleans, La., Charity Hospital, for instruction, and on completion to Camp Beauregard, Alexandria, La., base hospital, Capt. JULIUS S. MOORE, Arkadelphia.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School* for duty, Lieut. JACOB B. HESTERLY, Prescott.

To San Antonio, Texas, United States Army School, for duty, from Houston, Lieut. JAMES F. HAYS, Russellville.

The following orders have been revoked: *To Camp Kelly*, San Antonio, Texas, for duty, from Camp MacArthur, Lieut. JAMES M. BEST, Monticello. *To Camp Pike*, Little Rock, Ark., base hospital, from Fort Riley, Lieut. THERON E. FULLER, Texarkana.

California

To Camp Dodge, Des Moines, Iowa, as member of board examining the command for tuberculosis, from Camp Kearny, Major RALPH L. BYRNES, Los Angeles. With the board examining the troops for cardiovascular diseases, Capt. BERTNARD SMITH, Los Angeles.

To Camp Joseph E. Johnston, Jacksonville, Fla., base hospital, from Camp Kearny, Capt. HENRY S. KEYES, Los Angeles.

To Camp Kearny, Linda Vista, Calif., base hospital, Capt. JAMES W. HOUSTIS, Los Angeles; Lieut. FRANCIS S. COOK, Brentwood.

To Camp Lewis, American Lake, Wash., for duty, Lieut. JOSEPH H. SHAW, Santa Rosa.

To Camp MacArthur, Waco, Texas, with the board examining the command for tuberculosis, from Camp Kearny, Capt. CHARLES E. IDE, Redlands; Lieut. LESTER E. TRETHEWAY, French Camp.

To Fort McPherson, Ga., for duty, Major HARRY T. SUMMERSGILL, San Francisco.

To Fort Oglethorpe, Ga., for duty, from Fort Leavenworth, Major HARRY R. OLIVER, San Francisco. Base hospital, from Fort Leavenworth, Lieut. HERSEL E. BUTKA, Los Angeles. For instruction, Lieuts. WILLIAM L. DENTON, CLAIR WILSON, Los Angeles; from Chicago, Lieut. TRUSTEN M. HART, Los Angeles.

To New Haven, Conn., for duty, from Fort Oglethorpe, Major CHARLES J. HARBECK, Hayward.

To San Francisco, Calif., Letterman General Hospital, for duty, Lieut. VACLAV H. PODSTATA, Livermore.

To Washington, D. C., for temporary duty in the Surgeon-General's Office, Major HOWARD C. NAFFZIGER, San Francisco; from Camp Lee, Capt. ALBERT M. MEADS, Berkeley. For consultation, and on completion *to Lakewood, N. J.*, for temporary duty, from New York City, Capt. ERNEST W. CLEARY, San Francisco.

The following orders have been revoked: *To Camp Kearny*, Linda Vista, Calif., base hospital, Capt. GEORGE G. HUNTER, Los Angeles. *To Chicago, Ill.*, Northwestern University School of Medicine, for instruction, from Fort Riley, Lieuts. WALTER C. S. KOEBIG, JAMES H. McLAUGHLIN, Los Angeles; JOSEPH W. CRAWFORD, Sacramento.

Colorado

To Camp Hancock, Augusta, Ga., for duty, Lieut. FRED G. SWARTZ, Nederland.

To Camp Pike, Little Rock, Ark., base hospital Capt. EDGAR M. MARBOURG, Denver.

To Camp Travis, Fort Sam Houston, Texas, for duty, JOHN D. DAVIES, Alamosa.

Connecticut

To Camp Crane, Allentown, Pa., base hospital, from Camp Dix, Lieut. HARRY A. CONTE, New Haven.

To Camp Meade, Annapolis Junction, Md., for duty, Capt. CARL W. HENZE, New Haven.

To Camp Sevier, Greenville, S. C., to examine drafted troops and on completion *to his proper station*, from Camp Jackson, Lieut. ELMER T. SHARPE, Derby.

To Camp Shelby, Hattiesburg, Miss., *for duty, from* Camp Beauregard, Lieut. FREDERICK E. STOCKTON, Springdale.

To Camp Wheeler, Macon, Ga., with the board examining the troops *for cardiovascular diseases, from Fort Oglethorpe*, Capt. *ROBERT S.* STARR, Hartford.

To Hoboken, N. J., for duty, Lieut. ARTHUR M. YUDKIN, New Haven; from Camp Devens, Capt. FRANK P. TODD, Danielson.

To New Haven, Conn., for duty, from Camp Sherman, Lieut. FRANK J. RONAWNE, Hartford.

To New York City, Cornell Medical College, for instruction in military roentgenology, and on completion *to Hoboken, N. J.*, base hospital, from Camp Dix, Capt. EDWARD E. ROWELL, *Stamford*.

To Otisville, N. Y., for duty, from New Haven, Lieut. BERNARD C. MARANTZ, New Haven.

District of Columbia

To Army Medical School for duty, Capt. LEO. E. EVENS, Washington.

To Camp Hancock, Augusta, Ga., for duty, Capt. ALFRED GLASCOCK, Washington. With the board *examining the command for nervous* and mental diseases, Lieut. JOHN M. LADD, Washington.

To Camp Lee, Petersburg, Va., to examine the command for nervous and mental diseases, Lieut. JOSEPH H. TOOMEY, Washington.

To Hoboken, N. J., for duty, from Lakewood, Major WILLIAM C. MOORE, Washington.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Colonia, N. J.*, for duty, Capt. JOHN VAN RENSSELAER, Washington.

To Washington, D. C., for consultation and on completion *to his proper station*, from Camp Lee, Major JAMES F. MITCHELL, Washington. For duty, Major THOMAS E. NEILL, Lieut LEON A. MARTEL, Washington; from Walter Reed General Hospital, Capt. STUART G. JOHNSON, Washington.

Florida

To Camp Gordon, Atlanta. Ga., base hospital, from Camp Shelby, Capt. ARCHIE R. PARROTT, Jacksonville.

To Camp Jackson, Columbia, S. C., for duty, Lieuts. JAMES A. FORD, Arcadia; URBAN S. BIRD, Tampa.

To Camp Joseph E. Johnston, Jacksonville, Fla., to determine his physical fitness for active service, from Pensacola, Capt. STEPHEN R. N. KENNEDY, Pensacola.

To New York City, Bellevue Hospital, for *instruction*, and on completion *to his proper station*, from Camp Meade, Lieut. DANIEL B. WILLIAMS, Lake City; from Camp Wheeler, Lieut. SHALER A. *RICHARDSON, Jacksonville.*

Georgia

To Camp A. A. Humphreys, Accotink, Va., base hospital, Lieut. EUGENE L. DALLWIG, Augusta. For duty, and on completion *to his propert station*, from Camp Meade, Lieut. RALPH E. HAMILTON, Douglasville.

To Camp Devens, Ayer, Mass., base hospital, *from* Fort Oglethorpe, Lieut. DANIEL N. MATHESON, Atlanta.

To Camp Gordon, Atlanta, Ga., base hospital, Major CYRUS W. STRICKLER, Atlanta.

To Camp Hancock, Augusta, Ga., with the board examining the troops for cardiovascular diseases, Major THOMAS D. COLEMAN, Augusta.

To Camp Jackson, Columbia, S. C., for duty, Lieut. *GUY S.* SELMAN, Douglasville.

To Camp Sevier, Greenville, S. C., to examine drafted troops, and on completion *to his proper station*, from Camp Jackson, Lieut. EVERARD A. WILCOX, Augusta.

To Camp Upton, L. I., N. Y., for duty, from Army Medical School, CHESTER A. WITMER, Waycross.

To Camp Wheeler, Macon, Ga., with the board examining the command for nervous and mental diseases, from Camp Meade, Lieut. JAMES K. PETTIT, Milledgeville.

To Fort Bayard, N. M., for observation and treatment, from Camp Gordon, Lieut. LEWIS J. KEELING, Atlanta.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Major GEORGE A. TRAYLOR, Augusta; from Camp Lee, Lieut. JAMES J. BEATON, Waycross; from Camp Wheeler, Lieut. LAWSON S. RENTZ, Ray City.

To New York City, Bellevue Hospital, for instruction, and on completion *to his proper station*, from Camp Wheeler, Lieut. BOWMAN J. WISE, Plains.

Idaho

To Camp A. A. Humphreys, Accotink, Va., for duty, and on completion *to his proper station*, from Camp Meade, Capt. CLYDE E. WATSON, Nampa.

To Camp Travis, Fort Sam Houston, Texas, for duty, *from* Fort Bliss, Lieut. ROY W. QUICK, Weston.

To Chicago, Ill., Northwestern University School of Medicine, for instruction, Lieut. JAMES R. YOUNG, Pocatello.

To Hoboken, N. J., for duty, from Camp Grant, Lieut. JOHN F. COUGHLIN, Twin Falls.

To Otisville, N. Y., for duty, from New Haven, Capt. JOHN E. WHITE, Twin Falls.

Illinois

To Army Medical School for instruction, and on completion *to Boston, Mass.*, Harvard Graduate *School of Medicine*, for further instruction, from Fort Oglethorpe, Lieuts. SAMUEL L. STEVENS, *Dalton City*; GEORGE E. LYON, Decatur.

To Camp A. A. Humphreys, Accotink, Va., base hospital, Lieut. THOMAS H. HENN, Chicago; from Camp Wheeler, Lieut. HERMAN REINSCH, Chicago; from Fort Oglethorpe, Lieut. RUSSELL M. JOHNSON, Chicago. For duty, and on completion *to his proper station*, from Camp Meade, Lieut. JOHN F. GRANT, Chicago.

To Camp Crane, Allentown, Pa., base hospital, from Camp MacArthur, Lieut. THOMAS P. O'CONNOR, Chicago.

To Camp Custer, Battle Creek, Mich., base hospital, Major ROBERT B. PREBLE, Capt. ALBERT B. KEYES, Chicago.

To Camp Devens, Ayer, Mass., base hospital, from Camp Crane, Capt. CHARLES RICKSHER, Kankakee.

To Camp Dix, Wrightstown, N. J., for duty, from New York City, Lieut. GEORGE A. CONREY, Chicago.

To Camp Dodge, Des Moines, *Ia., base hospital*, from Camp Greene, Capt. LAMBERT W. ROSENBAUM, Chicago; from Camp Kearny, Capt. IRVING PERRILL, Chicago; from Camp Cody, Lieut. JESSE H. ROTH, Kankakee.

To Camp Hancock, Augusta, Ga., for duty, Capt. MAURICE L. BLATT, Chicago.

To Camp Jackson, Columbia, S. C., base hospital, Major BIRD McP. LINNELL, Lieuts. LELAND H. ANDERSON, WILLIAM J. BUTLER, MAURICE DOKTORSKY, MAX M. KULVINSKY, JACOB STERN, Chicago.

To Camp MacArthur, Waco, Tex., for duty, from Fort Oglethorpe, Lieut. GERHARD J. TORELL, Chicago.

To Camp McClellan, Anniston, Ala., for duty, from Camp Grant, Lieut. EDWARD T. ROBINSON, Chicago.

To Camp Meade, Annapolis Junction, Md., for duty, Lieut. WILLIAM L. HANSON, Bellevue, Ill.

To Camp Raritan, Metuchen, N. J., for duty, from Jefferson Barracks, Lieut. HARRY D. WOLFF, Chicago.

To Camp Shelby, Hattiesburg, Miss., with the board examining the command *for nervous and mental diseases, from* Camp Logan, Lieut. WALTER C. COOK, Peoria.

To Camp Sheridan, Montgomery, Ala., for duty, from Camp Meige, Lieut. MAXWELL LANDO, *Chicago*.

To Camp Sherman, Chillicothe, Ohio, as orthopedic surgeon, from Fort Oglethorpe, Lieut. GEORGE W. STABEN, Springfield. For duty, Lieut. JOSEPH JAFFE, Chicago.

To Camp Upton, L. I., N. Y., base hospital, from Fort Oglethorpe, *Lieut.* FRED W. FIEDLER, Batchtown. *For duty, from New York* City, Lieut. ARTHUR L. MUREN, Patterson.

To Camp Wheeler, Macon, Ga., base hospital, from Camp Beauregard, *Lieut.* CHARLES H. MANLOVE, Jr., Chicago.

To Camp Zachary Taylor, Louisville, Ky., for duty, from Camp Sherman, Lieut. WALTER C. MOHR, Chicago. With the board examining the command for nervous and mental diseases, from Ann Arbor, Lieut. DAVID B. ROTMAN, Chicago.

To Chicago, Ill., Northwestern University, for instruction, from Camp MacArthur, Lieut. JOHN E. REED, Akin; from Fort Oglethorpe, Lieut. ARTHUR S. SANDLER, Chicago. Presbyterian Hospital for instruction, and on completion *to their proper stations*, from Camp Custer, Lieuts. ABRAHAM L. DEASER, Chicago; LEO. V. GATES, Zeigler. *To assist in the examination of drafted troops, Lieut.* HARRY S. SULLIVAN, Chicago.

To Columbus Barracks, Ohio, for duty, from Fort Oglethorpe, Lieut. HARVEY D. THORNBURG, Chicago.

To Fort Bliss, Texas, base hospital, Lieut. ROSS E. ELVIDGE, Longview.

To Fort Des Moines, Ia., base hospital, Lieut. TALLEY J. ECHERER, Chicago; Lieut. LUCIUS COLE, Oak Park; from Camp Zachary Taylor, Lieut. RALPH C. SULLIVAN. For duty, Lieut. WILLIAM J. HENRY, Chicago.

To Fort Oglethorpe, for instruction, Capt. WILBUR H. GILMORE, Mt. Vernon; Lieuts. PHILIP H. WOLFRAM, Chicago; from Chicago, Lieuts. EDWARD HANS, RUSSELL D. ROBINSON, Chicago.

To Fort Riley for instruction, Lieut. LEWIS H. GREEN, Johnston City.

To Hoboken, N. J., for duty, Lieut. CHARLES L. McDONNELL, Chicago; from Camp Sherman, Capt. RALPH E. KLECKNER, Mattoon; from Camp Wheeler, Lieuts. JOHN PELLETTIERI, Chicago; JOSEPH F. MIECZYNSKI, *North Chicago; from* Camp Zachary Taylor; *Lieut.* MICHAEL A. GALGANO, Chicago; from Fort Oglethorpe, Lieut. FRANK C. FARMER, Chicago; from Fort Riley, Capt. IRVIN S. KOLL, Chicago; from New York City, Capt. ALBERT B. McQUILLAN, Chicago; Lieut. ELMER M. THOMAS, Aurora.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to his proper station, from* Camp Pike, Lieut. JOHN W. McGUIRE, Chicago.

To New York City for duty, and on completion *to his proper station*, Major CASEY A. WOOD. *Bellevue Hospital* for instruction, and on completion *to Camp Sevier*, Greenville, S. C., base hospital, Capt. MARK A. GIER, Chicago. On completion *to his proper station*, from Camp Meade, Lieut. FRANK T. DUFFY, Chicago.

To Pittsburgh, Pa., Carnegie Bldg., for instruction, and on completion *to Camp Dix*, Wrightstown, N. J., base hospital, Capt. CHARLES A. ROBBINS, Dixon. On completion *to Camp Sherman*, Chillicothe, Ohio, base hospital, Lieut. HARRY S. SULLIVAN, Chicago. Carnegie Institute of Technology, for instruction, and *on* completion *to his proper station*, from Fort Riley, Lieut. JOHN W. GEIGER, LaSalle.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School*, for duty, Capt. OSCAR T. SCHULTZ, Chicago.

Indiana

To Camp A. A. Humphreys, Accotink, Va., base hospital, *from* Fort Oglethorpe, Lieut. MILES F. PORTER, Fort Wayne.

To Camp Dix, Wrightstown, N. J., for duty, Capt. JOHN M. WALLACE, Ridgeville.

To Camp Dodge, Des Moines, Ia., base hospital, Lieut. ROBERT C. HAMILTON, Indiana Harbor.

To Camp Sevier, Greenville, S. C., to examine drafted troops and on completion *to his proper station, from* Camp Jackson, Lieut. CHARLES F. VOIGT, New Albany.

To Camp Sherman, Chillicothe, Ohio, base hospital, Capt. HERBERT E. WHITLEDGE, Evansville.

To Camp Zachary Taylor, Louisville, Ky., base *hospital, from* Camp Kearny, Lieut. ARLIE J. ULLRICH, Aurora.

To Fort Oglethorpe for instruction, Lieut. ELI LEVIN, Indiana Harbor; from Chicago, Lieut. HELMUTH C. W. ERNST, *East Chicago*.

To Hoboken, N. J., for duty, Lieut. JOSEPH M. FREEMAN, Sullivan; *from Camp* Wadsworth, Lieut. WALTER D. MARTIN, Kramer; from Camp Wheeler, Lieut. ELMER E. EIFERT, *Jasper; from Fort*

Oglethorpe, Capt. GEORGE H. HOCKETT, Anderson; from Washington, D. C., Lieut. JOHN S. ROBINSON, Winchester.

To New York City, Bellevue Hospital, for instruction and on completion *to his proper station*, from Camp Zachary Taylor, Lieut. EDGAR N. MENDENHALL, Fort Wayne.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to his proper station*, from Camp McClellan, Lieut. JOHN J. CONNELLY, Rockville.

To Pittsburgh, Pa., Carnegie Bldg., for instruction, and on completion *to his proper station*, from Camp Beauregard, Lieut. EDWARD L. DEWEY, Whiting.

To Plattsburg Barracks, N. Y., for duty, from Fort Strong, Major THOMAS B. V. KEENE, Indianapolis.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Waynesville, N. C., for duty, Capt. FRANKLIN T. WILCOX, Laforte.

To Washington, D. C., for duty in the Surgeon-General's Office, from Camp Grant, Capt. CLAUDE DeV. HOLMES, Indianapolis.

Iowa

To Camp Sevier, Greenville, S. C., for duty, from Camp Zachary Taylor, Lieut. EDGAR A. STEWART, Salem.

To Camp Sherman, Chillicothe, Ohio, for duty, Capt. ELLIOTT R. KING, Letts. As orthopedic surgeon, from Fort Oglethorpe, Lieut. RAY R. KULP, Davenport. Base hospital, Lieut. HENRY M. LEE, Decorah.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to Camp Custer*, Battle Creek, Mich., base hospital, Capt. JOSIAH R. McKIRAHAN, Perry. On completion *to his proper station*, from Camp Custer, Lieut. PAUL B. M. KERSTEN, Fort Dodge; from Camp Dodge, Capts. CHRISTIAN H. DEWEY, Perry; GARNER F. PARKER, Pocahontas; Lieut. JOSEPH L. RUYAVITZ, Duncombe.

To Fort Riley for instruction, Lieut. ANDLEY E. NELSON, Sidney.

To Hoboken, N. J., for duty, Lieuts. WALTER FRAZER, Algona; CLARENCE H. DOTY, Center Point; HENRY L. GARDINER, Gueyden; from Camp Logan, Lieut. FISHER B. E. MILLER, Cherokee; from Camp Zachary Taylor, Lieut. FRANK H. GAFFEY, Bradgate.

To Pittsburgh, Pa., Carnegie Bldg., for instruction, and on completion *to his proper station*, from Camp Beauregard, Lieut. MERLE BONE, Albia.

To the inactive list, Capt. LEO E. EVENS, Waterloo.

Kansas

To Camp Jackson, Columbia, S. C., for duty, Lieut. RILEY H. MILLER, Greensburg.

To Fort Bliss, Tex., base hospital, Capt. CHARLES E. ELLIOTT, Fort Riley.

To Fort McPherson, Ga., for duty, from Fort Oglethorpe, Capt. CLIFFORD C. NESSELRODE, Kansas City.

To Fort Oglethorpe for instruction, Lieut. HARRY L. GOSS, Horton.

To Hoboken, N. J., for duty, from Fort Riley, Lieut. GEORGE JENNINGS, Simpson.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to his proper station*, from Camp Pike, Lieut. ALBERT M. DAWSON, Topeka. Tulane University, to make physical examinations and give medical attention to the drafted men enrolled at this institution, and on completion *to his proper station*, from Camp Shelby, Lieut. HENRY H. HAERLE, Niles.

To New York City, Bellevue Hospital, for instruction and on completion *to Camp Gordon*, Atlanta, Ga., base hospital, Capt. ARCHIBALD D. JONES, Wichita. On completion *to his proper station*, from Camp Meade, Lieut. CASPER J. MIDDLEKAUFF, Hays.

To Otisville, N. Y., for duty, from Fort Riley, Capt. ANDREW ENGBERG, McPherson.

To San Antonio, Tex., for duty, from Houston, Lieut. WILLIAM S. FLEMING, Ness City.

To Wichita Falls, Tex., Call Field, Signal Corps, Aviation School, for duty, from Fort Worth, Lieut. GEORGE E. BRETHOUR, Dwight.

Kentucky

To Aberdeen, Md., for duty, Capt. ROBERT Y. SHEPHERD, Taylorsville.

To Camp Dix, Wrightstown, N. J., base hospital, from Camp Shelby, Capt. JOHN T. PRICE, Harrodsburg.

To Camp Jackson, Columbia, S. C., for duty, Lieut. OLLIE T. LOWERY, Tolu.

To Camp Lee, Petersburg, Va., with the board examining the troops for cardiovascular diseases, from Camp Meade, Capt. ALFRED H. KELLY, Shively. For duty, Capt. BENJAMIN L. HOLMES, Lieut. JOHN D. CARPENTER, Louisville.

To Camp Meade, Annapolis Junction, Md., for duty, Lieut. BALLARD C. LINCH, White Star.

To Camp Shelby, Hattiesburg, Miss., base hospital, from Camp Gorden, Capt. LLEWELLYN P. SPEARS, Louisville.

To Camp Sherman, Chillicothe, Ohio, for duty, Lieut. SIMRALL ANDERSON, Glenview.

To Edgewood, Md., for duty, Lieut. LATTA A. CRANDELL, Louisville.

To Fort Oglethorpe for instruction, Capt. JAMES B. MASON, London.

To Markleton, Pa., for duty, from Camp Grant, Major BENJAMIN F. VAN METER, Lexington.

To Otisville, N. Y., for duty, from New Haven, Capt. WALTER A. LACKEY, Paducah.

Louisiana

To Camp Crane, Allentown, Pa., base hospital, from Camp Travis, Capt. WILLIAM M. PERKINS, New Orleans.

To Camp Sevier, Greenville, S. C., to examine drafted troops and on completion *to his proper station*, from Camp Jackson, Lieut. PRESSLY Y. DONALD, Jackson.

To Fort Bayard, N. M., for duty, from Camp Dodge, Lieut. JOSEPH R. D'AUNCY, New Orleans.

To Hoboken, N. J., for duty, from New York City, Capt. WEBSTER W. BELDEN, New Orleans.

To Pittsburgh, Pa., Carnegie Bldg., for instruction, and on completion *to his proper station*, from Camp Beauregard, Lieut. SOLON R. HUMPHRIES, New Orleans.

Maine

To Camp MacArthur, Waco, Tex., to examine the command for nervous and mental diseases, from Camp Logan, Capt. FRANK E. LESLIE, Andover.

The following order has been revoked: *To Camp Devens*, Ayer, Mass., base hospital, Lieut. FRANK Y. GILBERT, Portland.

Maryland

To Camp A. A. Humphreys, Accotink, Va., base hospital, Lieut. JOSEPH E. NORRIS, Baltimore.

To Camp Crane, Allentown, Pa., base hospital, from Fort Oglethorpe, Lieut. CHARLES B. ENSOR, Baltimore.

To Camp Jackson, Columbia, S. C., base hospital, Lieut. GEORGE R. WILKINSON, Baltimore.

To Camp Wadsworth, Spartanburg, S. C., to examine the command for nervous and mental diseases, from Camp Meade, Lieut. VERNON L. MAHONEY, Catonsville.

To Camp Wheeler, Macon, Ga., with the board examining the troops for cardiovascular diseases, Lieut. JOHN T. KING, JR., Baltimore.

To Cape May, N. J., for duty, and on completion *to his proper station*, Major CHARLES BAGLEY, JR., Baltimore.

To Hoboken, N. J., for duty, Lieuts. FREDERICK H. CHARLES, Midland; JOHN D. DARBY, Oakland.

To New York City, Neurological Institute, for instruction, Lieut. HARRY W. WHEATON, Baltimore.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to Camp Greene*, Charlotte, N. C., base hospital, Lieut. HUNTER R. MANN, Mandela Springs.

The following orders have been revoked: *To Camp Hancock*, Augusta, Ga., for duty, from Camp Jackson, Lieut. ISRAEL J. FEINGLOS, Baltimore. *To Fort Oglethorpe* for instruction from Army Medical School, Lieut. DUMONT F. ELMENDORF, Baltimore.

Massachusetts

To Army Medical School for instruction, and on completion *to Boston, Mass.*, Harvard Graduate School of Medicine, for further instruction, from Fort Oglethorpe, Lieut. THOMAS B. RAFFERTY, Lynn.

To Camp A. A Humphreys, Accotink, Va., for duty, and on completion *to his proper station*, from Camp Dix, Lieut. GEORGE B. WILBUR, Newton.

To Camp Devens, Ayer, Mass., base hospital, Capt. DANIEL B. REARDON, Quincy; Lieut. FLETCHER H. COLBY, Boston.

To Camp Dix, Wrightstown, N. J., for duty, from Camp Meade, Major GEORGE E. McPHERSON, Medfield; from Camp Meigs, Lieut. ISRAEL E. RUDMAN, Boston.

To Camp Gordon, Atlanta, Ga., with the board examining the troops for cardiovascular diseases, from duty as a private, Lieuts. LESLIE N. GAY; THOMAS McC. MABON, Boston.

To Camp Lee, Petersburg, Va., base hospital, Major FRANCIS P. EMERSON, Lieut. THOMAS H. VAN CAMP, Boston. For duty, Lieut. JOHN L. C. COFFIN, Boston. To examine the command for nervous and mental diseases, and on completion *to his proper station*, from Camp Devens, Lieut. EARLE H. MACMICHAEL, Malden.

To Camp Sevier, Greenville, S. C., to examine drafted troops and on completion *to his proper station*, from Camp Jackson, Lieut. CYRUS B. PARTINGTON, Fall River.

To Camp Shelby, Hattiesburg, Miss., with the board examining the command for nervous and mental diseases, from Jackson Barracks, Lieut. FRANCIS S. CALDICOTT, Milford.

To Camp Zackary Taylor, Louisville, Ky., base hospital, from Camp Upton, Lieut. RICHARD A. CUNNINGHAM, Boston.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to his proper station*, from Camp Custer, Lieut. WILFRED T. LAFORTUNE, Fitchburg.

To Fort McPherson, Ga., for duty, from Camp Lee, Capt. JOSEPH B. SAYLES, Taunton.

To Fort Oglethorpe for instruction, Lieut. FRANK F. SANDLER, Revere; from duty as a private, Lieut. MILES M. HAMBURG, Waltham.

To Hoboken, N. J., for duty, Lieut. JOHN H. SHAW, Plymouth; from Camp Custer, Lieut. WILLIAM T. McMAHON, Pittsfield; from Camp Upton, Lieut. WINFRED OVERHOLSER, Westboro; from Fort Oglethorpe, Lieut. LEO P. CRIMMIN, Brockton.

To Lakewood, N. J., for temporary duty, and on completion *to his proper station*, Capt. FRANCIS W. PEABODY, Boston.

To Otisville, N. Y., for duty, from New Haven, Capt. CHARLES E. PERRY, Haydensville.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Upton*, Long Island, N. Y., base hospital, Capt. FRANK R. SEDGLEY, West Roxbury. On completion *to Williamsbridge, N. Y.*, for temporary duty, Capt. HAROLD A. JOHNSON, Lynn. On completion *to Camp Hancock*, Augusta, Ga., base hospital, Lieut. RALPH W. TURNER, Boston.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, Capt. FRANK B. GRANGER, Boston.

Michigan

To Army Medical School for instruction, and on completion *to Boston, Mass.*, Harvard Graduate School of Medicine, for further instruction, from Fort Oglethorpe, Lieut. HARTHER L. KEIM, Ann Arbor.

To Camp Custer, Battle Creek, Michigan, as orthopedic surgeon in camp, from Chicago, Lieut. CARROLL S. THOMSON, Clinton. Base hospital, from Camp Sherman, Lieut. ARTHUR R. TIMME, Detroit.

To Camp Dix, Wrightstown, N. J., for duty, Capt. HARRY B. KNAPP, Ionia.

To Camp Kelly, San Antonio, Texas, for duty, from Mineola, Lieut. RICHARD F. BOONSTRA, Detroit.

To Camp Sherman, Chillicothe, O., for duty, Lieut. MALCOM R. MARKSON, Calumet.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to his proper station*, from Camp Custer, Capt. ROBERT M. MARTIN, Detroit; Lieut. JOHN C. FOSHBEE, Grand Rapids; from Camp Dodge, Lieut. LEO R. PHILLIPS, Flint; from Camp Grant, Lieuts. ROBERT E. HAYES, Channing; EDMUND W. BOLIO, Detroit; RAYMOND M. SCHULTE, Dollar Bay. On completion *to Camp Pike*, Little Rock, Ark., base hospital, Lieut. CLIFFORD P. CLARK, Flint.

To Fort Des Moines, Ia., base hospital, Lieut. GEORGE H. CAMPAU, Detroit. For duty, Lieut. HARRY LIEFFERS, Grand Rapids.

To Fort McPherson, Ga., for duty, Lieut. ROBERT V. HOFFMAN, Detroit.

To Fort Riley for instruction, from Grand Rapids, Capt. LOUIS BARTH, Grand Rapids.

To Hoboken, N. J., for duty, Capt. CHARLES D. D. PULLEN, Mt. Pleasant; Lieuts. JAMES GOSTANIAN, EARL W. MAY, Detroit; from Camp Grant, Capt. LOUIS H. CHAMBERLIN, Grand Rapids; from Fort Oglethorpe, Capt. EDWARD A. FLORENTINE, Ewen.

To New Haven, Conn., for duty, Lieut. FRANK C. BLADERREY, Colon.

To Otisville, N. Y., for duty, from New Haven, Capt. Charles H. MERRILL, Detroit.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to his proper station*, from Camp Zachary Taylor, Capt. JOHN D. McKINNON, Calumet; Lieut. BURNS R. EASTMAN, Muskogee.

To Pittsburgh, Pa., Carnegie Bldg., for instruction, and on completion *to Camp Hancock*, Augusta, Ga., base hospital, Lieut. ISAAC S. GELLERT, Detroit. On completion *to Camp Sherman*, Chillicothe, Ohio, base hospital, Lieut. CLARENCE W. OLSON, Escanaba. On completion *to his proper station*, from Camp Sherman, Lieut. WORTH W. WALTON, Mancelona.

To Sacramento, Calif., Signal Corps Aviation School for duty, from Mount Clemens, Lieut. NELSON ABBOTT, Lake City.

Minnesota

To Camp American University, Washington, D. C., for duty, Lieut. CHARLES L. VON HESS, Rochester.

To Camp Dodge, Des Moines, Ia., base hospital, Lieut. FRANK N. KNAPP, St. Paul.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to their proper stations*, from Camp Dodge, Capt. WALTER D. BRODIE, St. Paul; from Camp Grant, Lieut. THURMAN R. BEAVER, Indianapolis.

To Fort Thomas, Ky., for duty, from New Haven, Lieut. GUY BRELSFORD, State Sanatorium.

To Hoboken, N. J., for duty, from Camp Custer, Capt. FRANCIS J. SAVAGE, St. Paul; from Fort Riley, Capts. HARRY H. SELLERS, JOHN S. MACNIE, Minneapolis.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to his proper station*, from Camp Pike, Lieut. FREDERICK N. BJERKEN, Red Wing.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Upton, L. I., N. Y.*, base hospital, Lieut. LAWRENCE E. LOPPER, Rochester.

To Pittsburgh, Pa., Carnegie Institute of Technology, for instruction, and on completion *to his proper station*, from Fort Oglethorpe, Lieut. JOE M. NEAL, Minneapolis.

To San Antonio, Tex., for duty, from Houston, Lieut. SAMUEL R. FRAKER, Cass Lake.

To Walter Reed General Hospital, Takoma Park, D. C., for temporary duty, Capt. ELMER M. JONES, St. Paul.

To Washington, D. C., for duty, from Camp Beauregard, Lieut. ALBERT E. JOHANN, Minneapolis.

To Wichita Falls, Texas, Signal Corps Aviation School, as flight surgeon, from Mineola, Capt. EDWIN S. INGERSOLL, Rochester.

Mississippi

To Army Medical School for instruction, from Fort Oglethorpe, Lieuts. THOMAS A. STRAIN, Meridian; JAMES H. SLAUGHTER, Plattsburgh.

To Camp Doniphan, Fort Sill, Okla., base hospital, from Fort Riley, Capt. ROBERT M. STEPHENSON, Lexington.

To Camp Hancock, Augusta, Ga., for duty, Lieut. ISAAC P. CARR, Clarksdale.

To Camp Sherman, Chillicothe, Ohio, base hospital, Capt. JOSEPH C. ARMSTRONG, Water Valley.

To New York City, Bellevue Hospital, for instruction, and on completion *to his proper station*, from Camp Wheeler, Lieut. HENRY F. SPROLES, Vicksburg.

Missouri

To Camp Bowie, Fort Worth, Tex., as assistant to camp surgeon, from West Point, Lieut. ROY F. MILLS, Odessa. As member of a board examining the command for tuberculosis, from Fort Riley, Lieut. HENRY A. MEYERS, Sedalia.

To Camp Crane, Allentown, Pa., for duty, from the Surgeon-General's Office, Major FREDERICK W. BAILEY, St. Louis.

To Camp Grant, Rockford, Ill., base hospital, Capt. CHARLES L. BLANKS, Mexico.

To Camp Jackson, Columbia, S. C., base hospital, Lieut. CLARE J. CLAPSADDLE, St. Louis.

To Camp Lee, Petersburg, Va., base hospital, from Fort Oglethorpe, Lieut. JOHN W. STEWART, St. Louis.

To Camp Pike, Little Rock, Ark., as a member of a board examining the command for tuberculosis, from Fort Riley, Lieuts. WILLIAM O. FINNEY, Chaffee; ROBERT SHEETZ, Orrick.

To Camp Travis, Fort Sam Houston, Tex., for duty, Lieut. RICHARD P. DORRIS, Jefferson City.

To Camp Upton, L. I., N. Y., for duty, from Army Medical School, Capt. HUBERT B. BEEDLE. Lieut. HUGH J. WITTWER, St. Louis.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to Camp Dodge*, Des Moines, Ia., base hospital, Lieut. EZRA C. GRIM, Kirksville.

To Fort Bliss, Tex., base hospital, Capt. CHARLES T. BELL, Maryville.

To Fort Riley for instruction, Lieut. JOSEPH A. HORIGAN, Kansas City.

To Fort Slocum, N. Y., as orthopedic surgeon, from Fort Oglethorpe, Capt. EDWARD L. COOLEY, St. Louis.

To Hoboken, N. J., for duty, Capts. EDWARD L. STEWART, Kansas City; WILLIAM L. SHARP, Little Rock; from Camp Lee, Capt. CARL M. SNEED, Columbia; from Camp Wadsworth, Lieut. JAMES LEWALD, St. Louis; from Fort Des Moines, Lieut. HORACE S. DOWELL, Clearmont; from Fort Oglethorpe, Lieut. HOWARD O. LIENHARDT, North Kansas City; from Fort Riley, Lieut. WELCOME E. TILTON, Grant City.

To Newport News, Va., for temporary duty, from Fort Oglethorpe, Capt. JAMES W. SHANKLAND, St. Louis.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School, for duty, Capt. McDOWELL BOTTS, Mexico.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, Capt. HUGH WILKINSON, Kansas City; from Fort Oglethorpe, Capt. WALTER C. G. KIRCHNER, St. Louis.

The following order has been revoked: *To Fort Sill, Okla.*, Lieut. JOHN N. DARROU

Montana

To Camp A. A. Humphreys, Accotink, Va., for duty, from Camp Grant, Capt. GEORGE B. OWEN, Polson.

To Camp Doniphan, Fort Sill, Okla., for duty, from Camp Grant, Lieut. WILLIAM E. LONG, Anaconda.

To Camp Lewis, American Lake, Wash., for duty, Lieut. CHARLES A. GARDNER, Columbus.

To Fort Riley for instruction, Lieut. HERBERT H. JUDD, Boseman.

To Hoboken, N. J., for duty, from Blacksburg, Va., Lieut. FERRIS L. ARNOLD, Billings; from Camp Bowie, Lieut. ROBERT L. REYNOLDS, Kalispell; from Fort Riley, Capt. GEORGE H. PUTNEY, Great Falls; Lieut. EUGENE F. BRINDJOINC, Butte.

Nebraska

To Camp Crane, Allentown, Pa., for duty, from Fort Riley, Capt. NORMAN C. PRINCE, Omaha.

To Camp Dix, Wrightstown, N. J., for duty, Lieut. PERRY D. KELLY, Nemaha.

To Camp Hancock, Augusta, Ga., for duty, Lieut. EDGAR A. PICKENS, Benkleman.

To Camp Pike, Little Rock, Ark., for duty, Lieut. WILLIAM R. PETERS, Stanton.

To Camp Travis, Fort Sam Houston, Tex., for duty, Lieut. JOHN L. SEARS, North Loup.

To Camp Zachary Taylor, Louisville, Ky., with the board examining the command for nervous and mental diseases, Capt. SAMUEL J. STEWART, Hastings; from Ann Arbor, Lieuts. WARD W. HEDLUND, Ingleside; ANDREW J. SMITH, Salem.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to his proper station*, from Camp Dodge, Lieut. CHARLES F. SHOOK, Omaha.

To Hoboken, N. J., for duty, Major ALFRED J. BROWN, Omaha: Capt. CECIL C. COPELAND, Beaver City, Lieut. WILLIAM L. SUCHA, Hastings.

To Pittsburgh, Pa., Carnegie Bldg., for instruction and on completion *to Camp Meade*, Annapolis Junction, Md., base hospital, Lieut. GEORGE F. FARMAN, Lincoln. On completion *to his proper station*, from Camp Beauregard, Lieut. ROY E. HALL, Fullerton. ,

New Hampshire

To Camp Meade, Annapolis Junction, Md., for duty, Lieut. WALTER H. SQUIRES, Haverhill.

To Camp Sheridan, Montgomery, Ala., to examine the command for nervous and mental diseases, from New York City, Lieut. GOODWIN A. JOHNSON, Concord.

To Camp Sherman, Chillicothe, Ohio, to examine the command for nervous and mental diseases, Lieut. ARTHUR B. HOWARD, Concord.

To Markleton, Pa., for duty, from Fort Oglethorpe, Lieut. JAMES C. THOMPSON, North Stratford.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to Camp MacArthur*, Waco, Texas, for duty, from Camp Zachary Taylor, Lieut. MELVIN P. BADGER, Manchester.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital*, Takoma Park, D. C., for temporary duty, Lieut. JOHN C. LAWLER, Dover.

New Jersey

To Camp Crane, Allentown, Pa., base hospital, from Fort Oglethorpe, Lieut. JOHN J. SZYMANSKI, Passaic.

To Camp Dix, Wrightstown, N. J., for duty, Lieut. FRANK DEL. SHERWOOD, Jersey City.

To Camp Jackson, Columbia, S. C., base hospital, Lieuts. IRWIN E. DEIBERT, Hadon Heights; WILLIAM L. THOMPSON, Jersey City.

To Camp Meade, Annapolis Junction, Md., base hospital, Lieuts. ARTHUR O. LARGAY; EDWARD A. MURPHY, Jersey City,

To Chicago, Ill., Northwestern University, for instruction, from Fort Oglethorpe, Lieut. ALEXANDER J. McCRAE, Upper Montclair.

To Colonia, N. J., for duty, from Army Medical School, Lieut. JOHN H. E. FUST, Carney's Point.

To Hoboken, N. J., for duty, from Camp Dix, Lieut. CHARLES RICH, Newark; from Camp Upton, Lieuts. MATTHER S. LEVITAS, WALTER C. LIEBMANN, Newark; from Dansville, N. Y., Lieut. FRANK J. VAN NOORT, Paterson.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Wheeler*, Macon, Ga., base hospital, Capt. FREDERICK M. PAUL, Newark.

To Otisville, N. Y., for duty, from Walter Reed General Hospital, Lieut. CHARLES N. KAIGHN, Stratford.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to Camp McClellan*, Anniston, Ala., base hospital, Capt. HORACE D. BELLIS, Trenton.

To Williamsbridge, N. Y., for observation and treatment, from New York City, Lieut. HAROLD F. WESTCOTT, Bridgeton.

New Mexico

To Des Moines, Iowa, base hospital, Capt. GEORGE K. ANGLE, Albuquerque.

To Hoboken, N. J., for duty, from Camp Greene, Lieut. JOHN L. REID, Portales.

To San Antonio, Texas, Kelly Field, for duty, from duty as a contract surgeon, Capt. JOSEPH W. LACKEY, Carlsbad.

To Whipple Barracks, Ariz., for duty, Capt. JAMES B. VAN HORN, Santa Rosa.

New York

To Army Medical School for instructions, from Fort Oglethorpe, Lieut. NATHAN WIENBERG, Brooklyn. On completion *to Boston, Mass.*, Harvard Graduate School of Medicine, for further instruction, from Fort Oglethorpe, Lieuts. JOHN D. COLSON, HENRY J. FEASTER, ALFRED H. IASON, ANTHONY MANGIARACINA, Brooklyn; PORTER A. STEELE, Buffalo; ABRAHAM B. PEMSLER, New York City.

To Camp A. A. Humphreys, Accotink, Va., as camp surgeon, from Camp Greene, Major ISAAC W. BREWER, Geneva. To examine the command for nervous and mental diseases, Capt. IRVING HOLLEY, Brooklyn. Base hospital, Lieut. ADAM EBERLE, Brooklyn; from Fort Oglethorpe, Lieut. KEVORK N. BOSTANIAN, New York City.

To Camp Colt, Gettysburg, Pa., for duty, from New York City, Lieut. JAMES J. CLARK, Olean.

To Camp Crane, Allentown, Pa., base hospital, from Camp Upton, Lieut. RICHARD S. PEARSE, Brooklyn; from New York City, Lieuts. WILLIAM G. HERRMAN, Brooklyn; SOL C. DAVIDSON, Rochester; HERBERT DeG. SHERMAN, White Plains; from Walter Reed General Hospital, Major FREDERICK T. VAN BEUREN, New York [illegible] RDON, Brooklyn. [illegible] N. J., for for duty, Capt. JOHN G. [illegible]

To Camp Hancock, Augusta, Ga., for duty, Capt. SAMUEL FRANK, Lieut. MAURICE RIVKIN, Brooklyn.

To Camp Jackson, Columbia, S. C., for duty, Capt. DENIS A. McAULIFFE, New York City. Base hospital, Lieuts. LEROY J. BUTLER, Albany; HARRY F. GOCKLEY, RUSSELL H. OPPENHEIMER, Blackwell's Island; PAUL W. FETZER, New York City; HORACE E. ROBINSON, Pleasantville; from New York City, Capt. HENRY T. CHICKERING, New York City.

To Camp Kelly, San Antonio, Texas, for duty, from Mineola, Lieut. PAUL B. JENKINS, New York City.

To Camp Las Casas, San Juan, Porto Rico, for duty, from Camp Meade, Lieut. HERMAN GOODMAN, New York City.

To Camp Lee, Petersburg, Va., to examine the command for nervous and mental diseases, and on completion *to his proper station*, from New York City, Capt. JAMES F. MUNSON, Sonyea. Base hospital, Lieut. PERRY J. MANHEIMS, New York City. For duty, Lieut. HOWELL S. BONTECOU, Beacon. With the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. JOHN F. LEWIS, New York City.

To Camp Meade, Annapolis Junction, Md., base hospital, Lieuts. RALPH M. VINCENT, Binghamton; JOHN CALANDRIELLO, Brooklyn; JAMES R. SKEECH, New York City.

To Camp Sevier, Greenville, S. C., with the board examining the troops for cardiovascular diseases, from Camp Lee, Capt. MARCUS A. ROTHSCHILD, New York City. To examine drafted troops, and on completion *to his proper station*, from Camp Jackson, Lieut. HARRY V. JUDGE, Albany.

To Camp Shelby, Hattiesburg, Miss., with the board examining the troops for nervous and mental diseases, Lieut. HYMAN HERSHBERG, Bronx.

To Camp Sherman, Chillicothe, Ohio, for duty, Lieuts. NATHANIEL M. HOCHBERG, Bronx; SIMON L. WRONKER, Rochester.

To Camp Travis, Fort Sam Houston, Texas, for duty, from Dallas, Lieut. MAX MENSCH, Brooklyn.

To Camp Upton, L. I., N. Y., for duty, Lieuts. BRUCE L. JONES, Long Island; SAMUEL ALTMAN, New York; from Army Medical School, Lieut. NATHANIEL CROST, New York City.

To Camp Wadsworth, Spartanburg, S. C., for duty, from New Haven, Capt. LEONARD P. SPRAGUE, Chateaugey.

To Camp Wheeler, Macon, Ga., to examine the command for nervous and mental diseases, from Fort Oglethorpe, Lieut. JAMES M. O'NEILL, Flushing.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to his proper station*, from Camp Grant, Lieut. BENJAMIN D. RUBEN, Port Chester.

To Del Rio, Texas, for duty, from Camp Shelby, Lieut. LEROY D. SOPER, Smyrna.

To Edgewood, Md., base hospital, from Fort Oglethorpe, Lieut. IRVING S. START, New York City.

To Fort Des Moines, Iowa, base hospital, Lieut. DONALD I. KIRK, Pittsburgh; from Camp Dodge, Capt. KENT E. WILLIAMS, Rome.

To Fort Sam Houston, Texas, for duty, Major JAMES I. RUSSELL, New York; from Fort Oglethorpe, Lieut. ANDREW J. ANDERSON, Long Island City.

To Hoboken, N. J., for duty, Capts. DANIEL C. O'NEIL, Binghamton; HORACE J. MANN, Brockport; Lieuts. SAMUEL A. WARSHAW, JOHN WIENMANN, Brooklyn; HAROLD E. SHEAR, Long Island; OSCAR H. FINKLE, New York City; FREDERICK P. LEE, Rosebank, Staten Island; from Army Medical School, Lieut. WALTER C. FOX, Fort Plain; from Camp Devens, Capt. THOMAS F. PATTERSON, Brooklyn; from Camp Dix, Lieut. HYMAN O. TEPERSON, Brooklyn; from Camp Meigs, Lieut. PHILIP KORN, New York City; from Cape May, Major LEMUEL R. HURLBUT, Lockport; from Fort Oglethorpe, Capt. JOSEPH E. HURLEY, Rochester; Lieut. THOMAS A. McGRATH, Hoosic Falls; from New York, Lieut. HERMAN B. PHILIPS, New York; from Washington, D. C., Lieut. FRANCIS J. LAWLER, Glen Falls; from Williamsbridge, Lieut. LOUIS GOLD, Brooklyn. Base hospital, Lieut. GORDON B. McFARLAND, New York City; from Rockefeller Institute, Lieut. MARTIN F. NOLAN, North Tonawanda.

To New Haven, Conn., for duty, Lieut. HENRY A. LATANE, Mount McGregor.

To New York City, Bellevue Hospital, as assistant instructor, from Rockefeller Institute, Capt. TIMOTHY F. SULLIVAN, New York City. For instruction, and on completion *to Camp McClellan*, Anniston, Ala., base hospital, Lieut. [illegible] Buffalo. On completion *to Camp Sheridan*, [illegible] hospital, Lieut. GEO. J. SIGNORELLI, Broo[illegible] *to Camp Wadsworth*, Spartanburg, S. C., base hospital, Lieut. WALTER A. McCULLOUGH, Brooklyn. On completion *to Camp Zachary Taylor*, Louisville, Ky., base hospital, Capt. FREDERICK T. OWENS, Utica. On completion *to his proper station*, from Camp Zachary Taylor, Lieut. HARRISON BETTS, Yonkers. On completion *to Washington, D. C.*, for duty in the Surgeon-General's Office, Capt. WILLIAM H. S. KNIPE, New York City.

To Otisville, N. Y., for duty, from New Haven, Capts. GEORGE H. SHAW, Camillus; THOMAS F. ELLIS, Lieut. FRANCIS A. GLASS, New York.

To Philadelphia, Pa., for duty, and on completion *to his proper station*, Lieut. JOHN P. SHARP, Niagara Falls.

To Pittsburgh, Pa., Carnegie Building, for instruction, and on completion *to his proper station*, from Camp Beauregard, Lieut. JOHN C. BROWN, Albany; from Camp Sherman, Capts. FREDERICK J. PFIESTERER, Ceres; MILTON G. BURCH, Hornell; LOWELL T. GENUNG, Worcester.

To Richmond, Va., Richmond School Board, to make physical examinations and give medical attention to the drafted men enrolled at this institution, and on completion *to his proper station*, from Camp Lee, Lieut. SAMUEL ZWERLING, Brooklyn.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Wheeler*, Macon, Ga., base hospital, Lieut. CALVIN E. BUSWELL, Brooklyn.

To Walter Reed General Hospital, Takoma Park, D. C., for temporary duty, from Fort Oglethorpe, Capt. JAMES P. FISKE, New York. For observation and treatment, from Camp MacArthur, Capt. JAMES E. CROSSMAN, East Randolph.

To Washington, D. C., for consultation, and on completion *to Newport News, Va.*, for duty, from Camp Joseph E. Johnston, Capt. HARRY PLOTZ, Brooklyn. For duty in the Surgeon-General's Office, Capt. FRANKWOOD E. WILLIAMS, New York.

To Williamsbridge, N. Y., for temporary duty, Major T. PASSMORE BARNES, New York City.

The following order has been revoked: *To Camp Lee*, Petersburg, Va., for duty, Lieut. SAMUEL S. FERN, New York City.

North Carolina

To Camp Gordon, Atlanta, Ga., as member of board examining the command for tuberculosis, from Fort Oglethorpe, Capt. THOMPSON FRAZER, Asheville.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Camp Sevier, Lieut. JAMES C. BRASWELL, Jr., Wilson.

To Camp Upton, L. I., N. Y., for duty, from New Haven, Capt. CHARLES S. JORDAN, Asheville.

To Camp Wheeler, Macon, Ga., with the board examining the command for nervous and mental diseases, from Fort Screven, Lieut. EVERETT S. BARR, Asheville.

To Edgewood, Md., for duty, Lieut. HENRY B. ROWE, Mount Airy.

To Fort Riley for duty, from Camp Lee, Lieut. MAX C. KING, Franklinton.

To Mineola, L. I., N. Y., Hazelhurst Field, Signal Corps Aviation School, for duty, from Camp Kelly, Lieut. JOHN B. POWERS, Wake Forest.

North Dakota

To Camp Grant, Rockford, Ill., base hospital, from Jefferson Barracks, Capt. ROBERT D. CAMPBELL, Grand Forks.

To Camp Laurel, Laurel, Md., for duty, from Camp Grant, Lieut. WILLIAM E MAERTZ, Lidgerwood.

To Kankakee, Camp Grant, Rockford and *Chicago, Ill.*, for conference and instruction, and on completion *to his proper station*, Major FREDERICK H. BAILEY, Fargo.

To Camp Meade, Annapolis Junction, Md., as orthopedic surgeon, in camp, from Philadelphia, Lieut. HARRY J. FORTIN, Fargo.

To Pittsburgh, Pa., Carnegie Institute of Technology, for instruction, and on completion *to his proper station*, from Fort Riley, Lieut. GUY S. FROGNER, Parshall.

Ohio

To Alessandro, Calif., Signal Corps Aviation School, for duty, from Houston, Lieut. FRANCIS T. GALLEN, Columbus; from Mount Clemens, Lieut. JOHN A. TRUE, Port Clinton.

To Army Medical School for instruction, from Fort Oglethorpe, Lieut. JAMES G. SMAILES, Coshocton.

To Biltmore, N. C., for duty, Capt. JOHN D. DUNHAM, Columbus.

To Camp Grant, Rockford, Ill., base hospital, from Camp Sherman, Capt. JOSEPH E. PIRRUNG, Cincinnati.

To Camp Hancock, Augusta, Ga., for duty, Capt. PERCY W. COBB, Cleveland.

To Camp Lee, Petersburg, Va., base hospital, from Camp Crane, Capt. JOHN H. HARVEY, Toledo.

To Camp MacArthur, Waco, Texas, for duty, from Fort Oglethorpe, Lieut. ALDO V. SIBERT, Lima.

To Camp Meade, Annapolis Junction, Md., as orthopedic surgeon in camp, from New York City, Lieut. LEONARD E. STUTEMAN, Dayton.

To Camp Sherman, Chillicothe, Ohio, with the board examining the command for cardiovascular diseases, from Fort Oglethorpe, Major ROGER S. MORRIS, Cincinnati. Base hospital, Lieut. ALFRED L. MAYFIELD, Cincinnati.

To Camp Upton, L. I., N. Y., for duty, Lieut. CARROLL E. DeCOURCY, Cincinnati; Lieut. JOHN SLIVKA, Cleveland.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to his proper station*, from Camp Custer, Lieut. JOHN H. MURRAY, Massillon; from Camp Grant, Lieut. IGNATIUS E. JASINSKI, Cleveland.

To Cleveland, Ohio, Lakeside Hospital, for duty, Capt. HENRY K. YAGGI, Salem.

To Colonia, N. J., for duty, from Camp Pike, Capt. ROBERT R. SELLERS, Orwell.

To Columbus Barracks, Ohio, for duty, from New Haven, Lieut. CHARLES K. ERVIN, Cincinnati.

To Edgewood, Md., for duty, from Washington, D. C., Lieut. CHARLES ALBERT S. WILLIAMS, Marietta.

To Fort Logan, Colo., for duty, from Jefferson Barracks, Lieut. GEORGE H. REEVE, Cleveland.

To Fort Oglethorpe for instruction, Capts. ZADOK F. ATWELL, Amsterdam; DANIEL L. MOHN, Ashland; from duty as a private, Lieut. ELI F. RAMBO, Akron.

To Fort Sam Houston, Texas, for duty, from Camp Pike, Lieut. RUSSELL E. LIGHTNER, Kingston.

To Hoboken, N. J., for duty, Lieuts. AMOS E. FRIED, Cleveland; ROSCOE H. SPITLER, Greenville; PINCKNEY S. BONE, Lancaster; BENJAMIN R. McCLELLAN, Xenia; from Camp Upton, Capt. ARTHUR J. McCRACKEN, Bellefontaine; from Fort Des Moines, Lieut. JOHN F. HOLTZ, Plymouth; from New York City, Lieuts. HARRY E. WOODBURY, Akron; JOHN K. LAWSON, Dayton.

To New Haven, Conn., for duty, from Camp Pike, Major PHILIP GATH, Cincinnati.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to his proper station*, from Camp Zachary Taylor, Capt. IVAN L. BIGGS, Custer.

To Pittsburgh, Pa., Carnegie Building, for instruction, and on completion *to his proper station*, from Camp Sherman, Capt. VICTOR BIDDLE, Steubenville, Lieut. CHARLES S. JACKSON, Edison.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School* for duty, Lieut. CLARKE C. PATTON, Ashland. For instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital*, Takoma Park, D. C., for temporary duty, Lieut. ARTHUR H. SMITH, Marietta.

To Waynesville, N. C., for temporary duty, Capt. ALFRED C. BARTHOLOMEW, Van Wert.

Oklahoma

To Army Medical School for instruction, from Fort Oglethorpe, Lieut. ELIJAH S. SULLIVAN, Oklahoma City.

To Camp A. A. Humphreys, Accotink, Va., base hospital, from Fort Oglethorpe, Major RUSSELL L. KURTZ, Nowata. For duty, from Fort Oglethorpe, Capt. HENRY DeW. SHANKLE, Hastings.

To Camp Crane, Allentown, Pa., base hospital, from Army Medical School, Lieut. GUY P. McNAUGHTON, Miami.

To Camp Dodge, Des Moines, Ia., base hospital, from Camp Doniphan, Lieut. CLYDE F. LOY, Shawnee.

To Camp Grant, Rockford, Ill., with the board examining the command for nervous and mental diseases, from Ann Arbor, Capt. ANTONIO DeB. YOUNG, Oklahoma City.

To Camp Hancock, Augusta, Ga., for duty, Lieut. JAMES LAS. MINER, Beggs.

To Camp Jackson, Columbia, S. C., for duty, Lieut. EDWARD N. McKEE, Enid; HARDIN F. IRVAN, Tulsa.

To Camp John Wise, San Antonio, Texas, for duty, from Waco, Lieut. JOSEPH T. GUNTER, Ochelata.

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieut. LAWRENCE H. HILL, Idabel.

To Colonia, N. J., for duty, from New York City, Lieut. MARION M. ROLAND, Oklahoma City.

To Fort Bliss, Texas, for duty, Lieut. WILLIAM G. LEMON, Tulsa; from Fort Leavenworth, Lieut. BARTON H. WATKINS, Gotebo.

To Fort Des Moines, Iowa, base hospital, from Camp Zachary Taylor, Lieut. HERMAN A. LAFORCE, Blair.

To Fort Riley for instruction, Lieut. JAMES M. CANNON, Billings.

To Hoboken, N. J., for duty, Lieut. GEORGE N. BILBY, Alva; WILLIAM D. BORNINGER, Atwood; from Camp Sherman, Lieut. ORANGE E. WELBORN, Kingston.

To Wichita Falls, Texas, Signal Corps Aviation School, for duty, Lieut. LITTLETON A. NEWTON, Oklahoma City.

The following order has been revoked: *To Fort Des Moines, Iowa,* for instruction, Lieut. ROBERT W. MOTLEY, Muskogee.

Oregon

To Camp Lewis, American Lake, Washington, for duty, Lieut. HIRAM C. DODDS, Dufur. To examine the command for nervous and mental diseases, from Talmage, Lieut. CLARENCE U. SNIDER, Portland.

To Vancouver Barracks, Wash., for duty, from Talmage, Lieut. KENNETH W. KINNEY, Astoria.

Pennsylvania

To Alessandro, Cal., Signal Corps Aviation School, for duty, from Mount Clemens, Lieut. HENRY MacV. SMITH, Pittsburgh.

To Army Medical School for instruction, and on completion to Boston, Mass., Harvard Graduate School of Medicine, for further instruction, from Fort Oglethorpe, Lieuts. EDWARD H. McCLISTER, Kittenning; EDGAR B. SLOTERBECK, Monessen; WALTER W. SCHMID, Pittsburgh.

To Camp A. A. Humphreys, Accotink, Va., base hospital, Lieut. JULIUS A. BLASSER, Philadelphia. For duty, and on completion *to his proper station,* from Camp Meade, Lieuts. RALPH L. ENGLE, ABRAHAM TRASOFF, Philadelphia.

To Camp Colt, Gettysburg, Pa., from Walter Reed General Hospital, Lieut. JOHN W. BANCROFT, Johnstown.

To Camp Devens, Ayer, Mass., for duty, from New Haven, Lieut. FRANK F. D. RECKORD, Harrisburg.

To Camp Dix, Wrightstown, N. J., for duty, from New York City, Lieut. THOMAS L. McCULLOUGH, Homewood.

To Camp Hancock, Augusta, Ga., *as assistant to camp surgeon, from* Fort Oglethorpe, Major SENECA EGBERT, Philadelphia. For duty, Lieut. DANIEL W. FRYE, Pittsburgh.

To Camp Jackson, Columbia, S. C., base hospital, Lieuts. ALBERT W. FISHER, Fountain Springs; ABE K. WEAVER, EDWARD I. WOLFE, Jr., Philadelphia.

To Camp Las Casas, San Juan, Porto Rico, as orthopedic surgeon, from Camp Dix, Lieut. LOUIS H. MAYER, Jr., Johnstown.

To Camp Lee, Petersburg, Va., for duty, Lieut. SAMUEL LER. BOSSARD, Saegerstown.

To Camp Meade, Annapolis Junction, Md., base hospital, Capt. HARRY S. CARMANY, Philadelphia. For duty, Lieuts. HERBERT H. BOYER, Kunkletown; RAMON J. SIFRE, Philadelphia; JOHN R. CAROTHERS, Smock.

To Camp Sherman, Chillicothe, Ohio, for duty, Lieut. HARRY J. OWENS, Hazleton.

To Camp Upton, L. I., N. Y., for duty, Lieut. CLARENCE H. MILLER, Media.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Camp Meade, Capt. HENRY G. MUNSON, Philadelphia.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from duty as a private, Lieut. AUDRA H. YARNALL, California.

To Edgewood, Md., for duty, Capts. ANDREW HUNTER, McKeesport; JOHN W. FEARN, Wattsburg.

To Fort Des Moines, Iowa., base hospital, from Camp Lee, Lieut. LLEWELLYN I. THOMAS, Burnham.

To Fort Oglethorpe for instruction, Capt. CHARLES N. MONTGOMERY, Philadelphia; Lieut. IRWIN J. OBER, Greensburg.

To Fort Snelling, Minn., for temporary duty, Capt. JOSIAH T. BUNTING, Philadelphia.

To Fort Thomas, Ky., with the board examining the troops for cardiovascular diseases, Capt. JOSEPH H. BARACH, Pittsburgh.

To Hoboken, N. J., for duty, Capt. ISAAC H. ALEXANDER, Wilkinsburg; Lieut. WILLIAM K. SHEA, Philadelphia; from Camp Custer, Major ELMER C. JACKSON, Pittsburgh; from Camp Grant, Lieut. CHARLES H. KIRK, Homer City; from Camp MacArthur, Lieut. ROBERT W. RICHARDS, Shingle House; from Camp Upton, Lieut. THOMAS J. McNELIS, Lucerne Mines.

To Lakewood, N. J., for duty, Capt. ROBERT J. HENDERSON, Bowmansville.

To Milwaukee, Wis., Chicago, Ill., and *Washington, D. C.,* for duty, from Madison, Wis., Major HENRY D. JUMP, Philadelphia.

To New Haven, Conn., for duty, Lieut. JULIUS H. GOLDSTEIN, Pittsburgh.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to his proper station,* from Camp Pike, Lieuts. LEROY UMBURN, Albion; JAMES W. SILLIMAN, Bradenville.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Lee,* Petersburg, Va., base hospital, Lieut. ARTHUR E. S. CASEY, Philadelphia. On completion *to Camp Meade,* Annapolis Junction, Md., base hospital, Lieut. EARL E. REBHORN, Scranton. On completion *to Camp Sheridan,* Montgomery, Ala., base hospital, Lieut. LOUIS S. DUNN, Chester. On completion *to his proper station,* from Camp Meade, Lieut. CHARLES S. FOX, Philadelphia; from Camp Wheeler, Lieuts. EDWARD Y. ORD, McKeesport; WILLIAM J. STEWART, Pittsburgh. On completion *to Rockefeller Institute* for instruction in the treatment of infected wounds, and on completion *to his proper station,* from Fort Slocum, Major LOUIS A. SPAETH, Philadelphia.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to his proper station* from Camp Zachary Taylor, Capt. HOMER S. WILSON, Grove City. On completion *to Camp Sevier,* Greenville, S. C., base hospital, Lieut. JACK H. HAMILL, Ligonier.

To Pittsburgh, Pa., for duty, from Camp Lee, Major EWING W. DAY, Pittsburgh.

To Rockefeller Institute, for instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital,* Takoma Park, D. C., for temporary duty, Lieut. JOSEPH A. PERKINS, Philadelphia.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, Capt. CLARENCE H. INGRAM, Pittsburgh; from Camp Logan, Lieut. EDWARD PARDOE, South Fork.

To Williamsbridge, N. Y., for observation and treatment, from New York City, Lieut. JOHN H. BENNETT, York.

The following order has been revoked: *To Fort Oglethorpe* for instruction, Capt. BENJAMIN F. ROYER, Harrisburg.

Porto Rico

To Camp Las Casas, San Juan, Porto Rico, for duty, Lieuts. JOSE F. GONZALES, Lares; FRANCISCO R. DE JESUS, Ponce; PASCUAL A. RIVERA, San German; SALVADOR GIULIANAI, San Juan.

Rhode Island

To Camp Hancock, Augusta, Ga., for duty, Capt. FRANK A. FEARNEY, Providence.

To Camp Kelly, San Antonio, Texas, for duty, from Mineola, Capt. ARTHUR W. STEVENSON, Newport.

To Cape May, N. J., for temporary duty, Lieut. FREDERICK N. BIGELOW, Providence.

To Fort Oglethorpe for instruction, Capt. WINTHROP G. LINCOLN, Lieut. JOSEPH E. BANNON, Providence.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to his proper station,* from Camp Zachary Taylor, Capt. HARMON P. B. JORDEN, Providence.

South Carolina

To Army Medical School, for instructions, from Fort Oglethorpe, Lieut. COLLINS E. SMITH, Ridgeville.

To Camp Sheridan, Montgomery, Ala., for duty, from Lake Charles, La., Lieut. LONNIEL M. McMILLAN, Florence.

To Hoboken, N. J., for duty, from Camp Beauregard, Lieut. BENJAMIN T. WYMAN, Oswego.

To New York City, Bellevue Hospital, for instruction and on completion *to his proper station,* from Camp Meade, Lieut. LACY W. CORBETT, Bishopville.

South Dakota

To Fort Riley for instruction, Capt. ROBERT M. MALSTER, Carter.

Tennessee

To Camp Crane, Allentown, Pa., for duty, from Fort Oglethorpe, Capt. HERBERT H. McCAMPBELL, Knoxville.

To Camp Hancock, Augusta, Ga., for duty, Lieut. ARCHIE L. ERWIN, Nashville.

To Camp Lee, Petersburg, Va., for duty, Lieut. SWAN BURRUS, Woodland Mills.

To Camp Meade, Annapolis Junction, Md., for duty, Lieut. MARVIN B. CAMPBELL, Lebanon.

To Camp Raritan, Metuchen, N. J., for duty, Capt. JOSEPH H. KARSCH, Memphis.

To Camp Wheeler, Macon, Ga., with the board examining the command for nervous and mental diseases, from Camp Meade, Lieut. WILLIAM B. LUNSFORD, Nashville.

To Fort Sam Houston, Texas, for duty, Lieut. ROBERT F. PATTERSON, Knoxville.

To Hoboken, N. J., for duty, Lieut. CHARLES E. STARNS, Memphis.

To Pittsburgh, Pa., Carnegie Bldg., *for instruction, and on completion to his proper station,* from Camp Sherman, Lieut. THOMAS W. MENEES, Nashville.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to his proper station,* from Camp Zachary Taylor, Lieut. ARA D. SHARP, Murfreesboro.

Texas

To Army Medical School, for instruction, and on completion *to Boston, Mass.,* Harvard Graduate School of Medicine, for further instruction, from Fort Oglethorpe, Capt. JOSEPH H. SHELTON, Kingsville; Lieut. HALL SHANNON, Dallas.

To Camp Hancock, Augusta, Ga., for duty, Capt. CHARLES B. McGLUMPHY, Galveston.

To Camp Jackson, Columbia, S. C., for duty, Capts. LORAC E. HASTINGS, Dallas; DICK P. WALL, Galveston; Lieut. MERT R. STARNES, Temple.

To Camp Kearny, Linda Vista, Cal., base hospital, Capt. RICHARD E. NICHOLSON, Brenham.

To Camp Lewis, American Lake, [illegible] camp surgeon, from Fort Riley, Major IRVY L. [illegible]

To Camp Logan, Houston, Texa , [illegible]. ROBERT L. OWENS, Delhart.

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieut. NAT. M. KENNEY, San Antonio; from Fort Bliss, Lieut. ERNEST W. NITSCHE, Dallas.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Fort Apache, Capt. ROBERT H. McLEOD, Palestine.

To Del Rio, Texas, for duty, Capt. CLAUDE C. HIGGINS, San Antonio; from Camp Zachary Taylor, Lieut. ROSCOE ETTER, Hubbard.

To Fort Apache, Ariz., for duty, Lieut. TRUMAN C. TERRELL, Fort Worth.

To Fort Bliss, Texas, for duty, Lieut. WHITMEL H. JONES, Humele.

To Hoboken, N. J., base hospital, Lieut. GORDON B. McFARLAND, Ladonia. For duty, Lieut. WILLIAM THOMAS, Mabank; from Camp Dodge, Lieut. THERON B. BOND, Fort Worth; *from* Camp Travis, Lieut. ALLEN JOHNSON, San Antonio; from Fort Riley, Lieut. JOHN R. LEWIS, Gainesville.

To New Orleans, La., Charity Hospital, for instruction, and *on completion to Camp Gordon,* Atlanta, Ga., base hospital, Capt. CHARLES C. GREEN, Houston. On completion *to Camp Shelby,* Hattiesburg, Miss., base hospital, Lieut. ELISHA P. ROBBINS, Houston. *On completion to Walter Reed General Hospital,* Takoma Park, D. C., for temporary duty, Capt. JAMES A. HILL, Houston, Lieut. CHARLES E. COLLINS, Alvin.

To Otisville, N. Y., for duty, from New Haven, Lieut. IVY STANSELL, Sanderson.

To report to the commanding general, Southern Department, for assignment to duty, Lieut. BASCOM LYNN, San Angelo; from Fort Sam Houston, Capt. FRANK L. PASCHAL, San Antonio.

To Richmond, Va., Richmond School Board, to make physical examinations and give medical attention to the drafted men enrolled at this institution, and on completion *to his proper station*, from Camp Lee, Lieut. WALTER L. JACKSON, Dallas.

To Rockefeller Institute for instruction in the treatment of infected wounds and on completion *to Camp Meade*, Annapolis Junction, Md., base hospital, Capt. EDWIN B. KENNER, Galveston. On completion *to Cape May, N. J.*, for duty, from New York City, Lieut. JOHN E. QUAY, Waco.

To Sacramento, Cal., Signal Corps Aviation School for duty, from Waco, Lieut. Y. FRANK HOPKINS, Thrall.

To San Antonio, Texas, for duty, from Houston, Capt. THOMAS F. BRYAN, Dublin; Lieut. DAVID L. LOWRY, Teague.

To Waco, Texas, Rich Field, Signal Corps Aviation School, for duty, Capt. WILLIAM F. CURRAN, Waco.

To Wichita Falls, Texas, Call Field, Signal Corps Aviation School, for duty, Lieut. MILTON C. WILLIAMS, San Marcas.

To Williamsbridge, N. Y., for duty, from Fort Oglethorpe, Capt. IRA E. PRITCHETT, Houston. For observation and treatment, from New York City, Capt. WILLIAM R. FICKESSEN, San Antonio.

Utah

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to his proper station*, from Camp Grant, Lieut. CLARENCE S. GARDNER, Kaysville.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to his proper station*, from Camp Pike, Capt. WALTER E. WHALEN, Ogden.

To report by wire to the commanding general, Western Department, for assigment to duty, Capt. FREDERICK W. TAYLOR, Provo.

To Sacramento, Cal., Signal Corps Aviation School, for duty, from Waco, Lieut. RAY T. WOOLSEY, East Salt Lake City.

Vermont

To Camp MacArthur, Waco, Texas, as sanitary inspector, from Plattsburg Barracks, Major EDWARD A. TOBIN, North Bennington.

To Hoboken, N. J., for duty, Capt. JOHN R. PLATTON, Fairfield; Lieut. GEORGE G. HALL, Woodbury; from Camp Upton, Lieut. GEORGE C. RUBLEE, Hardwick.

Virginia

To Army Medical School for instruction, and on completion *to Boston, Mass.* Harvard Graduate School of Medicine, for further instruction, from Fort Oglethorpe, Lieut. MARSHALL L. BOYLE, Jr., Richmond.

To Camp Crane, Allentown, Pa., for duty, Major HUGH H. TROUT, Roanoke; Lieuts. ALFRED P. JONES, CARL C. WOLFF, Roanoke. Base hospital, from Army Medical School, Lieut. ALBERT P. TRAYNHAM, Richmond.

To Camp Hancock, Augusta, Ga., for duty, Lieut. ALEXANDER A. SIZER, Schuyler.

To Camp Lee, Petersburg, Va., base hospital, from Hoffman's Island, Lieut. BEVERLY P. ECKLES, Richmond; from Williamsbridge, Lieut. EDGAR W. YOUNG, McKenney.

To Camp Logan, Houston, Texas, base hospital, from Fort Oglethorpe, Lieut. ELIJA M. HICKS, Roanoke.

To Camp Meade, Annapolis Junction, Md., for duty, Lieuts. WILLIAM KARP, Portsmouth; CHARLES B. BAUGHMAN, Rural Retreat.

To Fort Monroe, Va., for duty, and on completion *to New York City*, Neurological Institute, from New York City, Major BLANTON HILLSMAN, Richmond.

To Fort Oglethorpe for instruction, Lieut. MARIANO B. CABALLERO, Petersburg.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieut. ISAAC H. GOLDMAN, Richmond; from Fort Oglethorpe, Lieut. JOSEPH L. McCABE, Richmond.

To New York City, Cornell Medical College, for instruction in military roentgenology, and on completion *to Hoboken, N. J.*, base hospital, from Camp Dix, Lieut. PATRICK N. CARROLL, Rio Vista.

The following order has been revoked: *To Fort Des Moines, Iowa*, for instruction, Lieut. MOSES CLAYBOURNE, Boone Mill.

Washington

To Camp Fremont, Palo Alto, Cal., base hospital, from Camp Kearny, Capts. RICHARD H. LYON, Bothell; FOREST A. BLACK, EDWARD P. FICK, Seattle; FRANK T. WILT, Steilacoon, Lieuts. HOWARD C. RANDOLPH, Aberdeen; GUY E. MARCY, Montesano; WILLIAM C. KANTNER, HOWARD J. KNOTT, Seattle.

To Camp Lewis, American Lake, Wash., for duty, Lieut. YNGVE J. NYVALL, Seattle.

To Fort Riley for instruction, Lieut. LUNSFORD M. THOMPSON, Spokane.

The following order has been revoked: *To Camp Kearny*, Linda Vista, Cal., base hospital, Lieut. BERTON E. FLEMING, McCreary.

West Virginia

To Camp McClellan, Anniston, Ala., as orthopedic surgeon in the camp, from [illegible] BYRON W. STEELE, Mullens.

To Camp [illegible] Ohio, for duty, Capts. ORRA F. COVERT, [illegible] R. MEIGHEN, Wheeling.

To Newp[illegible] for duty, from Camp Morrison, Lieut. RALPH H. BOICE, Sistersville.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to his proper station*, from Camp Pike, Lieut. REECE M. PEDICORD, Elm Grove.

To Pittsburgh, Pa., Carnegie Building, for instruction, and on completion *to his proper station*, from Camp Sherman, Lieut. JOHN E. MILLER, Widen.

To Riverside, Cal., Signal Corps Aviation School, for duty, from Arcadia, Lieut. HARRY R. PARKER, Williamson.

The following order has been revoked: *To Camp Joseph E. Johnston*, Jacksonville, Fla., for duty, from Fort McPherson, Lieut. WILLIAM D. LEWIS, Beckley.

Wisconsin

To Camp Meade, Annapolis Junction, Md., for duty, Lieut. ARTHUR CHARBONNEAU, Green Bay.

To Camp Pike, Little Rock, Ark., as a member of a board examining the command for tuberculosis, from Fort Riley, Capt. HENRY C. CALDWELL, St. Croix Falls. For duty, Lieut. JOSEPH P. SCHLAIKOWSKI, Milwaukee.

To Chicago, Ill., Northwestern University School of Medicine, for instruction, Capt. ERNEST L. BOLTON, Chilton. Presbyterian Hospital, for instruction, and on completion *to Camp Bowie*, Fort Worth, Texas, base hospital, Lieut. HERBERT F. WOLTERS, Milwaukee. On completion *to Camp Grant*, Rockford, Ill., base hospital, Lieut. TIMOTHY J. HOWARD, Milwaukee. On completion *to his proper station*, from Camp Dodge, Capt. PAUL J. LEWIS, Bloomington.

To Hoboken, N. J., for duty, from Camp Mills, Major E. J. BARRETT, Sheboygan; from Camp Custer, Capt. ALBERT A. MAURER, La Crosse; from Fort Oglethorpe, Capt. FRANK E. DARLING, Milwaukee.

To Lonoke, Ark., Signal Corps Aviation School, for duty, from Houston, Capt. PATRICK R. MINAHAN, Fond du Lac.

To Otisville, N. Y., for duty, from New Haven, Capt. MICHAEL R. WILKINSON, Oconomowoc.

The following order has been revoked: *To Camp Kelly*, San Antonio, Texas, for duty, from Camp MacArthur, Lieut. GEORGE W. HARRISON, Ashland.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ILLINOIS

Section Officers.—At the annual meeting of the Illinois State Medical Society, Dr. Wesley H. Peck, Evanston, was elected chairman of the eye, ear, nose and throat section, and Dr. Frank Allport, Chicago, was elected secretary of the section.

Vaccination Rule to Be Enforced.—On account of the increasing epidemic of smallpox throughout Illinois, the officials of the state board of health are urging stringent enforcement of the vaccination rule. The board suggests that every person not previously vaccinated within a five-year period be vaccinated. A prevention and treatment propaganda by means of moving picture films for use in all theaters has been started by the state department of health.

Personal.—Dr. Clarence W. East, Springfield, is reported to have passed first in the examination for chief of the division of tuberculosis of the department of public health.——A reception was given by the Bureau County Medical Society at Princeton, May 28, in honor of Dr. Oliver J. Flint, Princeton, who has been called to army service. Dr. Rolando H. Henry, Tiskilwa, was the toastmaster. Dr. Samuel W. Hopkins, Walnut, presented the toast, "Dr. Flint as a Citizen"; Dr. John H. Franklin, Spring Valley, "Dr. Flint as a Physician"; Dr. Charles C. Scott, Princeton, "The Physician's Place in War"; Dr. Joseph M. O'Malley, Ohio, "The Physician Patriot," and Dr. Alfred E. Owens, Princeton, "A Memorial of Friendship."——Dr. Charles H. Spencer, Wheaton, is said to have been sentenced, May 10, to imprisonment for thirty days in the Wheaton jail, by Judge Landis, on a charge of violating the draft law.

Plan for Tuberculous Soldiers.—A plan is suggested whereby the central division of the American Red Cross, the Illinois State Department of Public Health, and the Illinois Tuberculosis Association agree to cooperate in securing adequate care and treatment for the returned tuberculous soldier, whether he may or may not have been discharged in line of duty. This plan includes the notification of the return of tuberculous soldiers to the central division of the Red Cross, by the home service section of the local chapter, which will then get in touch with the soldiers and ascertain the facts desired. The Illinois Tuberculosis Association will furnish to the central division of the American Red Cross complete records of all returned tuberculous soldiers with whom communication has been established or whose return has been reported to the association. In the shortest practicable time, then, it will have all returned tuberculous soldiers examined, their cases diagnosed and the proper methods of treatment outlined, and it will report on these matters to the central division. The Illinois Tuberculosis Association will enlist the services of experts in the diagnosis of tuberculosis, and have competent nurses as the necessity arises. The expenses of transportation to the central examining points are to be advanced by the local service section of the Red Cross, providing the patient is unable to pay them himself. The special examiners will cooperate with the local health officers so that the home service section may be in touch with the returned soldiers at all times, and the local health officer may be enabled to protect the interests of the civil population. The results of all examinations are to be reported to the state department of public health. In the interim between the return of the tuberculous soldier and his examination and the outlining of plans for his more permanent care, the home service section of the American Red

Cross will render the returned soldier such care as he may require. The temporary or permanent housing of a returned soldier, in the county almshouse will not be countenanced by the American Red Cross. The organization will pay one third of the expense of sanatorium or other care, providing the remaining two thirds can be secured from individuals or special agencies. All records are to be open to representatives of all parties to the agreement, and complete reports of progress are to be sent frequently to the central division of the American Red Cross.

Chicago

Personal.—Dr. Thomas H. Boughton has been appointed coroner's physician, to succeed Dr. William H. Burmeister, who has started for France.——Dr. Nathaniel H. Schaffner, charged with violation of the Harrison Narcotic Law, is said to have pleaded guilty to the unlawful sale of drugs and to have been sentenced to a term of two years' imprisonment in the federal penitentiary, Leavenworth.——"Dr." Richard Langfield is said to have been fined $100 and costs and sentenced to six months imprisonment by Judge Haas, May 14, on the charge of practicing medicine without a license.

Hospital Car.—The new hospital car, which is to be used in the transportation of the patients from the Psychopathic Hospital direct to the state hospitals at Dunning, Elgin and Kankakee, was open for inspection at the Psychopathic Hospital, June 4, from 1 to 5 p. m. The car, built by the Chicago Railways Company at a cost of $16,000, has accommodation for twenty-four male patients, seats for twenty and cots for four, and fourteen female patients with seats for twelve and cots for two. The car is provided with two toilet rooms, ice water, and has additional doors at the end through which stretchers may be carried into the car. The first trip of the car will be made to Dunning, on June 13, and on the following day a trip to Elgin or Kankakee will be made.

INDIANA

Vincennes Physician Found Guilty.—Dr. Wilhelm T. von Knappe, Vincennes, who recently was found guilty in federal court and sent to jail for one day, on the charge of sending obscene literature through the mail, entered a plea of guilty to the charge pending in the Knox Circuit Court.

Personal.—Dr. Anexamander M. Hayden has been appointed president of the Evansville Board of Health, succeeding Dr. Carl G. Viehe, deceased.——Dr. Otis M. Keyes, Dana, is critically ill on account of cerebral hemorrhage.——Dr. Charles E. Caylor, Pennville, has moved to Blufftown where he will open a private hospital.——Dr. Giles E. Mowrer has resigned as chief physician at the Indiana Reformatory, Jeffersonville.——Dr. Anexamander M. Hayden has been elected president, Dr. Gardner C. Johnson, vice president, and Dr. Walter R. Cleveland, secretary, of the Evansville School Clinic for Indigent Children.——Lieut. Carl L. Souder, Columbia City, has been ill with bronchial pneumonia in the base hospital at Camp Grant, Rockford, Ill.

MARYLAND

Nurses in Service.—At the last session of the Maryland State Nurses' Association, held last week at Cumberland, the president submitted a report which showed that of the graduate nurses in Maryland, more than 500 have registered for Red Cross work, and of this number approximately 250 are already in active service.

Health Officers Named.—The following physicians have been appointed health officers for Carroll County by the county commissioners: Drs. Franklin H. Seiss, Taneytown; Luther Kemp, Uniontown; George L. Wetzel, Union Mills; Harry F. Bare; Milton D. Norris, Eldersburg; William R. S. Denner, Manchester; Lewis K. Woodward, West Minister; Daniel M. Resh, Hempstead; Roland R. Diller, Detour; Abraham T. Cronk, Taylorsville; J. S. Getty; Thomas H. Legg, Union Bridge; Edgar H. Willard, Knoxville, and Daniel B. Sprecher.

Legacy to Hopkins.—The Johns Hopkins University and the Johns Hopkins Hospital have been given a legacy estimated to be valued at $700,000, which is to be divided equally between the university and the hospital. As there were no restrictions placed on its use, it is probable that the income will be used to augment the general funds of the Johns Hopkins. By the same will, the Franklin Square Hospital has received $25,000, the income of which is to be used in the maintenance of a room for those who would be uncomfortable in the free ward.

Personal.—Dr. Nathan R. Gorter, one of the most prominent physicians of Baltimore city, is critically ill at his home. According to his physician, Dr. Gorter's illness began with a severe streptococcus infection of the throat about ten days ago. He immediately developed a high temperature, accompanied by a spread of the infection to the intestinal tract. This was followed by arthritis and facial erysipelas. His condition is only slightly improved.——Dr. Luigi A. Stefano has been appointed health warden for the fifth district by Health Commissioner John D. Blake.——Dr. Eugene McE. Van Ness and Dr. Walter L. Denny, Jr., have been named as members of the board of surgeons in place of Drs. James M. Craighill and William S. Gilroy, who are on the police board.——Dr. William F. Sappington of Hancock, who was with the British Medical Corps in France and was slightly wounded by a bursting shell six months ago, has been transferred to the United States Army and has been made camp surgeon and commander of a hospital with a capacity of 750 patients, "somewhere in France."——Dr. Edward P. Smith, superintendent of the Mercy Hospital, Baltimore, has resigned to enter private practice. Dr. Smith is a graduate of the class of 1912, College of Physicians and Surgeons, Baltimore, and has been superintendent at Mercy Hospital for five years. He will still retain his connection with the hospital as a member of the visiting staff in the department of general surgery.——Word has been received that Capt. Charles W. Maxson, who was captured in France, April 26, by the Germans, was not injured when taken prisoner. Captain Maxson had been loaned to the British for special trench service and had been decorated with the Distinguished Service Order by the British government.

MASSACHUSETTS

Harvey Cushing Honored in Ireland.—Major Harvey Cushing, M. R. C., on May 25, received an honorary fellowship from the Royal College of Surgeons of Ireland at Dublin. Major Cushing has been abroad for about one year as head of Base Hospital No. 5, the Peter Bent Brigham Hospital unit.

MISSISSIPPI

Appropriation for Sanitation.—The city council of Pascagoula has appropriated $10,000 and the city of Moss Point, $7,000, which, with the $8,000 available from the national government, will make up $25,000 and will be used to introduce proper sanitation into the shipyards district.

State Society Officers.—At the fifty-first annual meeting of the Mississippi State Medical Association, held in Jackson, May 14 and 15, under the presidency of Dr. Willis Walley, Jackson, the following officers were elected: president, Dr. Waller S. Leathers, University; vice presidents, Drs. Ira B. Seale, Holly Springs; William G. Gill, Newton, and William D. McCalip, Yazoo City; secretary, Dr. Thomas M. Dye, Clarksdale; treasurer, Dr. James M. Buchanan, Meridian; councilors, second district, Dr. Billy S. Guyton, University; ninth district, Dr. John C. McNair, Fayette, and tenth district, Dr. Daniel J. Williams, Gulfport. Hattiesburg was selected as the next place of meeting.

MISSOURI

Personal.—Dr. Eugene H. Bullock, St. Joseph, has been appointed director of health of Kansas City.——Dr. Emmett P. North, St. Louis, has been appointed a member of the Missouri State Board of Health, succeeding Dr. Marc R. Hughes, St. Louis, who has resigned to enter military service.——Dr. William L. Gleaves, Kansas City, sustained a serious injury of the eye in an automobile collision, May 17.

NEW JERSEY

Montclair Physicians Patriotic.—At the annual meeting of the Associated Physicians of Montclair and vicinity, held at Montclair, May 27, a special tribute was paid to seventeen members of the organization who are in military service. Dr. Richard Cole, Newton, was elected president; Dr. Leslie C. Love, Montclair, vice president; Dr. Browne Morgan, Bloomfield, secretary, and Dr. James W. Krichbaum, Upper Montclair, treasurer.

Personal.—Dr. Enoch Hollingshead, Pemberton, and J. Clifford Haines, Vincentown, have been elected members of the board of managers of Pine Rest, the Burlington County Sanatorium for Tuberculosis, New Elizabeth. Dr. D. F. Reamer, Mount Holly, has been made superintendent of the institution and secretary of the board.——J. A. Fetzer has accepted the presidency of the New Jersey State Conference on Charities and Correction.——Dr. Eugene L. Reed, Atlantic City, was stricken with a cerebral hemorrhage, May 3.

NEW YORK

Personal.—Dr. William H. Heath has been appointed director of hygiene and education of Buffalo, and Dr. Frederick W. Koehler, medical inspector of food industry.

Examination for Health Officers.—The board of health of the Lake George health district announces a competitive examination for the position of full-time health officer at a salary of $3,000 a year and expenses. Application blanks may be secured from Mr. Loyal L. Davis, Glens Falls. The examination will be both written and oral, the latter part of it being held at Lake George, June 14, at 10 a. m. Applicants should state whether they have taken a special course in public health as provided by the Public Health Service, whether they have been exempted from such a course, or whether they are now registered for this course, and, if so, the name of the university where they are registered and when they expect to complete this course.

New York City

Hebrew Asylum Anniversary.—The Brooklyn Hebrew Orphan Asylum celebrated the fortieth anniversary of its founding, May 26, with an elaborate program. Commissioner of Charities Bird S. Coler made the principal address.

Mackay Home Offered as Hospital.—Clarence H. Mackay has offered his country home at Roslyn, L. I., with its 600 acres of fields, drives and buildings, to the American Red Cross for use as a base hospital. It is estimated that without difficulty it could care for 400 or 500 patients.

Red Cross Starts Drive for Nurses.—The Atlantic division of the American Red Cross celebrated Memorial Day by forming committees to direct a drive for nurses which starts next Monday. The Red Cross states that 5,000 nurses are needed now for the American Army abroad and that 25,000 will be needed before the close of the year.

Medical Aid for Palestine.—The New York Chapter of Hadassah, the women's Zionist organization, has completed the equipment of a medical unit for Palestine, consisting of fifty-one physicians and nurses. It has sent out an appeal for $1,000 to meet the cost of a motor truck which is needed. This unit is to form the foundation of a large and permanent system of medical relief work that is to be conducted in Palestine on a basis of assistance to all, irrespective of race or religion.

Hospitals Aid Draft Registrants.—The New York hospitals, in response to an appeal from the government, have notified Adj.-Gen. Charles H. Sherrill that they are prepared to give medical and surgical treatment to those registrants of Class 1, who have been classified as eligible for military service, subject to necessary surgical operation or medical treatment. Dr. Victor C. Pedersen, chief medical officer of the selective draft for New York, will be in charge of this part of the draft work in New York.

Health Department Official Denied Open Trial.—Charges of neglect of duty, inefficiency and incompetence have been preferred against Dr. Lucus P. Brown, director of the bureau of foods and drugs of the health department, by Health Commissioner Copeland. This action has been taken, notwithstanding the promise, made soon after Dr. Brown's suspension, that he would be given an open trial and would be allowed to have counsel and witnesses. It is understood that the public will not be permitted to be present at the hearing.

Greenhut Building for Government Hospital.—The Medical Department of the Army has leased the building formerly occupied by the Greenhut Company Department Store for the period of the war and a year thereafter. The Greenhut building is six stories high and the estimated floor space is 1,000,000 square feet. The government will immediately turn this building into a modern hospital with 4,000 beds. It will be known as the Sixth Avenue Hospital, and will be used as a clearing hospital and for medical cases, the surgical cases being sent to better equipped hospitals nearby.

Poor Milk Raises Infant Death Rate.—The records of the New York City Health Department show that there is an increase of five per 10,000 in the deaths of infants during the five months of 1918, as compared with the corresponding period of 1917. This increase is attributed to impure milk and to lack of nourishment. Commissioner Copeland has planned to confer with the big milk dealers of the city and has ordered the director of the bureau of foods and drugs to begin an exhaustive inspection of all stores handling milk, as well as of the plants of the big milk companies.

OHIO

Fight Against Epidemics.—To prevent the spread of communicable diseases the city council of Toledo has voted to transfer $75,000 to the epidemic fund of the municipal welfare department.

Personal.—Dr. Samuel C. Caldwell has resigned as physician to the Ohio Boys' Industrial School, Lancaster.——Dr. Charles C. Jones, Canton, is said to have been indicted by the grand jury, May 7, on a charge of performing a criminal operation. He was released on a $2,500 bond.

Saving the Children.—Twelve counties of the state saved their respective quotas of children during the three months, even though the Children's Year had not yet opened. These counties, with their quotas, totaling 50, are: Auglaize 4, Coshocton 6, Delaware 4, Gallia 4, Hancock 6, Hardin 6, Huron 3, Morrow 2, Noble 6, Union 3, Van Wert 3, Madison 3. Six of these each saved one more than its quota and two saved two more each, giving an excess saving of ten. Twenty-two cities which saved their quotas, or more than their quotas, are as follows: Delphos, Conneaut, Nelsonville, East Liverpool, Salem, Coshocton, Gallipolis, Xenia, Norwood, Findlay, Kenton, Bellevue, Jackson, Mount Vernon, Bellefontaine, Elyria, Piqua, Circleville, Mansfield, Tiffin, Bowling Green, Wapakoneta. Their total saving was seventy-four babies. Of this total saving of 134 in twelve counties and twenty-two cities, all but the thirteen saved in the state at large was neutralized by the records of thirty-six counties and thirty cities, which showed a loss as compared with 1916. In this group Cincinnati lost fifty-eight more than in 1916, and Columbus lost twenty-nine more. Cleveland failed to attain her quota, but saved fifty-eight more than in 1916.

OREGON

Personal.—Dr. William L. Parker, Baker, who is under treatment at St. Vincent's Hospital, Portland, is reported much improved.——Dr. William W. Kimmell, Lebanon, is reported critically ill at his home as the result of a cerebral hemorrhage.

Mackenzie Hall Dedicated.—Mackenzie Hall, the new building of the University of Oregon Medical School, Portland, was dedicated, May 1. Dr. Kenneth A. J. Mackenzie, dean of the medical school, presided. The dedicatory address was delivered by President Ernest H. Lindley, of the University of Idaho. The cornerstone was laid by Governor Withycombe. The compus contains about 21 acres, half of which is to be devoted to medical school buildings; the other half has been set aside for hospital sites.

PENNSYLVANIA

Personal.—Dr. Lincoln R. Light, Lebanon, who has been ill with pneumonia, has recovered and resumed practice.——Dr. William S. Peirce, Warren, is reported to be seriously ill in a hospital in Buffalo.——Dr. Joseph H. Hayes, Lock Haven, is under treatment in the Lock Haven Hospital on on account of paralysis.——Dr. Jane R. Baker, West Chester, has been appointed trustee of the Asylum for the Chronic Insane at Wernersville.——Dr. J. W. Campbell, Elderton, has gone as a medical missionary to Wukari, Northern Nigeria, West Africa.

Philadelphia

Personal.—Dr. Richard D. Burke has succeeded Dr. John H. Remig, resigned, as coroner's physician.——Dr. Alfred Ettinger, head of Christ's Home for Children, suffered a fracture of the skull and other injuries by the overturning of an automobile near Hatboro, April 28, and is under treatment in the Abbington Memorial Hospital.——Dr. Wilmer Krusen, director of health and charities, has been given the degree of Doctor of Laws by the University of Pittsburgh.——Dr. Richard D. Burke, a select councilman from the twelfth ward, was appointed coroner's physician, May 25, succeeding Dr. John H. Remig, resigned.——Mr. John F. McEvoy, chief deputy of the department of internal revenue, was one of the speakers at the West Philadelphia Medical Society, May 28. His subject, "Recent Rulings," related to laws of the department as they affect physicians.

Officers Elected.—At the annual business meeting of the alumni association of the Jefferson Medical College the following officers were elected: president, Dr. P. Brooke Bland; first vice president, Dr. Henry K. Gaskill; second vice president, Edward J. G. Beardsley; third vice president, William S. Higbee; fourth vice president, Dr. J. Leslie Davis; corresponding secretary, Dr. Elmer H. Funk; recording secretary, Dr. Edward J. Klopp; treasurer, Dr. Warren B. Davis. At the annual banquet held at the Arcadia Café, Dr. Chevalier Jackson, the retiring president, was toastmaster.

SOUTH CAROLINA

Personal.—Dr. Francis B. Johnson, Charleston, has been made director of the state laboratory, Columbia, succeeding Dr. Francis A. Coward, who has entered the military service. ——Dr. Herbert E. McDowell, Spartanburg, was struck by an automobile, April 7, fracturing his right arm and sustaining other injuries. He is under treatment at the Spartanburg Hospital.

Palmetto Physicians Meet.—At the twenty-third annual meeting of the Palmetto Medical Association, an organization of colored physicians, dentists and pharmacists, held in Orangeburg, April 25 to 27, Dr. William H. Johnson, Charleston, was elected president; Dr. Seibels R. Green, Orangeburg, vice president; Dr. Jesse H. Thomas, Camden, secretary, and H. H. Cooper, Columbia, treasurer. The 1919 meeting will be held at Denmark.

WISCONSIN

New Medical Infirmary.—The University of Wisconsin reports the receipt of gifts amounting to $100,000 which, with an appropriation of $50,000 from the legislature of 1917, will be used in the construction of a new infirmary for the medical school.

Sanatorium Site Selected.—The location for the Tri-County Tuberculosis Sanatorium for Ashland, Bayfield and Iron Counties has been finally chosen, Salmo, Bayfield County, on Chequamegon Bay being the site selected. Plans are being made, and the construction of buildings will be begun at the earliest possible date. Ashland County has voted $31,500, Bayfield County $26,000, and Iron County $20,000 toward the sanatorium.

CANADA

Second Medical Board of Review.—A second medical board of review has been established in the Toronto Military District. The following are the members thereof: Major Edward B. O'Reilly, Hamilton; Capt. Robert L. Morrison, and Capt. Julian D. Loudon, Toronto.

Dominion Health Commission.—At Ottawa recently, before Mr. Justice Hodgins, Toronto, who is conducting an inquiry for the Ontario government into the extent of feeblemindedness and venereal diseases in that province, Gen. John T. Fotheringham, Toronto, advocated the establishment of a Dominion health commission with plenary powers and authority to enforce treatment and segregation, if necessary, for the purpose of coping with the problem of venereal diseases among the civil population of the Dominion.

Medical Week in Hamilton.—A very successful conference of the medical men completed, Saturday, June 1, one of the largest medical meetings ever held in Canada, as about 1,000 were registered from all over the Dominion. Four medical associations held their annual meetings, the Canadian Medical Association, the Ontario Medical Association, the Health Officers' Association of Ontario, and the Canadian Medical Protective Association. Also, were held the annual meetings of the Canadian Public Health Association, and the Association for the Prevention of Tuberculosis, but these two admit laymen to membership. The secretary of the last organization stated that there is now in Canada accommodation for 3,000 tuberculosis patients, and that more than $900,000 was annually expended on the work. More than $3,000,000 are invested in plants. It was the intention of that association to trace the men with tuberculosis rejected by the army and to treat them. The Canadian Medical Protective Association in its annual reports showed satisfactory progress. It was felt, however, that the association should be better patronized by the profession, as its membership still stays at about 1,000. Dr. Robert H. W. Powell, Ottawa, was reelected president, and Dr. J. Fenton Argue, Ottawa, secretary-treasurer. A feature of the meeting was the poster display of the American Medical Association on the patent medicine outrage. The idea was expressed that some plan for closer association of the two national medical bodies, the A. M. A. and the C. M. A., should be formed in order to carry on successfully a determined campaign to offset this great evil. The Association of Health Officers of Ontario had many exhibits, as well as the health department of Toronto. The latter showed various tests for water and milk, also apparatus in connection with rendering germs visible. The former showed antitetanic serum in all the stages of its preparation. This came from the Connaught Laboratories of the University of Toronto. Since the war began, these laboratories have sent overseas more than 140,000 packages of this product. Dr. J. Alexander Hutchinson was elected president of the Canadian Public Health Association, the acting secretary being Dr. Robert D. DeFries, Toronto. Dr. George R. Cruickshank, Windsor, was elected president of the Health Officers' Association of Ontario, and Col. John W. S. McCullough, Toronto, remains as secretary of the organization. Perhaps, the keenest interest shown by the members of the congress, from a practical and scientific standpoint, was manifested in the address on surgery by Dr. Charles H. Mayo, and in the address on medicine by Dr. Lewellys F. Barker. Cancer was the subject of Dr. Mayo's address. He declared that 200,000 people have it in the United States and that 80,000 die annually from the disease. The death rate in Ontario is about 2,000 per annum. Dr. Barker dealt with heart murmurs, especially as they apply to the rejections in the army. The surgeons passed a resolution calling for the control of the issuance of licenses to surgeons. Whenever such legislation is enacted, it will require all surgeons to take three extra years of study, either in a hospital, or with a qualified surgeon. The officers elected for the Ontario Medical Association were as follows: President, Dr. George S. Cameron, Peterboro; treasurer, Dr. Gordon A. Bates, Toronto; secretary, Dr. Thomas C. Routley. Next year the annual meeting will be held in Toronto.

GENERAL

Pediatric Officers.—At its thirtieth annual meeting held in Lenox, Mass., May 27, 28 and 29, the American Pediatric Society elected the following officers: president, Dr. Edwin E. Graham, Philadelphia; vice president, Dr. Henry Heiman, New York City; secretary, Dr. Howard C. Carpenter, Philadelphia; treasurer, Dr. Charles Hunter Dunn, Boston, and recorder, Dr. Oscar M. Schloss, New York City. The next meeting will be held in Atlantic City.

American Association of Anesthetists Meets.—The sixth annual meeting of this association will be held in Chicago, June 10, at the Auditorium Hotel. A program of papers has been provided. Dr. F. W. Nagle, Montreal, is president of the association, and Dr. Isabella C. Herb, Chicago, is one of the vice presidents; Dr. James T. Gwathmey, now in France, is secretary and treasurer, and Dr. F. H. McMechan, Avon Lake, Ohio, is acting secretary.

Bequests and Donations.—The following bequests and donations have recently been announced:

Polyclinic Hospital, New York City, a gift of $1,000 to be applied to the support of free beds in the ophthalmological service of Dr. Earle Conner.

Emory University and Oglethorpe University, Atlanta, each $5,000 by the will of Dr. William S. Kendrick, senior professor of medicine at Emory Medical College.

Presbyterian Hospital, Philadelphia, $10,000, Polyclinic Hospital, $5,000, and Women's Hospital, $5,000 by the will of Mary L. Baugh, Philadelphia.

Status of Library of the Surgeon-General's Office of the Army Defined and Books to be Added.—While the library of the Surgeon-General's Office of the United States Army has for many years been open freely to the medical profession of the entire country, notwithstanding that the library has been in fact primarily an adjunct to the Army, its public and general status is now officially recognized in a bill passed by the United States Senate on May 17. The bill provides that this being the large general medical library for the use of the medical profession of the United States, in the copyrighting of the books on medical and allied subjects there shall be deposited with the Congressional Library three copies, one of which shall be for file in the library of the Surgeon-General's Office of the United States Army. The bill now goes to the House of Representatives for consideration.

Unauthorized Subscription Pedlers Arrested.—Dr. Charles Ryttenberg, Port Chester, N. Y., writes that he has succeeded in "landing" one of the ringleaders of the subscription fraud that has been worked for several years past—chiefly on members of the medical profession. Among the titles used in this fraud were "United Students Aid Society," "Advance Society of the University of Illinois," "Michigan Educational

Association," "National Educational Society" and "University Progressive Club." On Sept. 18, 1915, Dr. Ryttenberg was a victim to the extent of $5 under the head of "The Michigan Educational Association"; recently, under the guise of the "American Defense Association," an attempt was made to solicit him again, the statement being made that the subscription would assist a man into the Engineering Corps of the United States Army. He called the police and the solicitor was arrested. After three days the solicitor confessed that he and two others had been working the country for some time, and produced the various types of receipts used by them. He also divulged the names of others involved in the scheme.

FOREIGN

"New and Nonofficial Remedies" in France.—The *Progrès Médical* of May 4, just received, gives a description of the work of the Council on Pharmacy and Chemistry of the Americal Medical Association and of its publication "New and Nonofficial Remedies," "founded," it says, "with the aim of informing the members of the medical profession as to the value of the proprietary medicinal articles which flood America." The *Progrès* adds, "Looking over the 1917 edition of this work, we see that of the 500 or 600 products therein inscribed, there are not even ten of French make. More than half of them are manufactured by German firms; the others come from England or are made in the United States. . . . The reason for this, we are told by Monsieur Puckner, president of the Council on Pharmacy and Chemistry, which has charge of the publication of the work, is that the German proprietary pharmaceuticals have been sent in large numbers to America, and consequently a large number were presented for examination by the Council. Another reason for the small number of French proprietaries included is that among those which were sent to America and offered for examination by the Council, many did not comply with the rules governing the admission of proprietary articles to the book 'New and Nonofficial Remedies.'" The *Progrès* then gives in full detail the object of the rules, the contents of the book, the definitions of terms, and the six main rules governing, respectively, composition, identification, direct and indirect advertising, fraudulent claims as to origin, and unwarranted therapeutic claims. The article is published also in the April number of the French *Journal de pharmacie et de chimie.*

The Arsphenamin (Salvarsan) Investigation in Germany.—The *Nederlandsch Tijdschrift* relates that, in reply to an interpellation by one of the deputies, the minister of internal affairs in Germany declared that his study of the subject had shown no grounds for interfering with the use of arsphenamin by the medical profession. The responsibility for its use rests on the physician, and there is no call for the state to interfere. This has elicited a protest from Dreuws, who started the ball rolling two years ago. He published an article in the *Deutsche Zeitung* of Feb. 28, 1918, in which he said that the medical journals have closed their columns to him, but he declared he knows that paralysis, after the use of arsphenamin, has occurred in the proportion of 224 per hundred thousand cases; blindness in 1.3; serious skin lesions in 620; lesions in the brain in 61.3; and deafness, unmistakably due to the arsphenamin, in 16, and, probably due to it in 14.6. He protested that the government inquiry among specialists was like asking brewers whether the use of alcohol should be permitted. The minister in his investigations had found twenty deaths after the use of arsphenamin among the 265,158 cases from the practice of 500 physicians. Dreuws stated that he had heard or read of sixty-seven fatal cases, and warned that cases might escape record, as the blindness or deafness might not develop until weeks after the arsphenamin treatment. Pinkhof, in commenting on this in the *Tijdschrift* mourns that the day has passed when the value of a remedy was determined by physicians. "Nowadays," he says, "the discoverer of the remedy or his friends rush before the public with such claims for the superiority of their product that there is no opportunity for a calm comparative study of it. If we do not prescribe this new 'superior' remedy, we are regarded as being behind the times, or worse. This advertising to the public avenges itself—on the public in the first place, and then also by sapping the confidence of the public in medicine as a whole."

Competitive Examinations for Internships After the War.—The Paris Société médicale des hôpitaux has been discussing ways and means by which medical students now serving in the war will be able to win places as interns after demobilization. Three resolutions were adopted and they are offered for the approval of the profession in general and of the hospital authorities: 1. That each medical student or recent graduate should have his army record carefully made out and verified by signatures, a *carnet de campagne,* on which should be recorded the young man's position and work, the number of months under fire, the number of engagements in which he has taken part, the wounds he has received, citations, decorations, etc., a verified and attested biographical record of his army service during the war. 2. There should be two competitive examinations at a few months' interval, the first being open only to those who have been serving in the army; and only half the vacant posts are to be filled from this first examination. The second examination is open, as usual, to all, including those who failed at the first examination. 3. The principle is advocated of allowing the military candidates a certain number of credits proportionate to the length of their service at the front. The idea is not to give many credits, merely one credit for each six months' work under fire, and half a point for each six months' work in a division ambulance. This plan will give the men from the front a trifling superiority over those who have been in the home zone. In the second competitive examination, it will give to the men who have been under fire a slight advantage over the nonmobilized, women candidates, foreigners, and all those who have been able to carry on their medical studies undisturbed. This will, to an extent, equalize the race between a candidate who recites by heart pages of anatomy learned from a textbook and another candidate who has given the most magnificent proofs of devotion, courage, decision of character, and knowledge through practical experience.

SOUTH AND CENTRAL AMERICA, MEXICO AND WEST INDIES

Exclusion of Alien Members.—Last November, when Brazil declared war against Germany, the Sociedad de Medicina e Cirurgia of S. Paulo held a special open meeting and adopted resolutions congratulating the president of the republic for the stand he had taken. At the same meeting it was voted to drop from the membership of the society members of enemy nationality.

Honduras Organizes Public Health Department.—The *Vida Nueva* of Havana reports that Honduras has created the Departamento de Salud Publica and remarks that this represents progress for this Central America republic. It continues "It may not be amiss to refer once more to the fact that for many years there has been a public health service in Cuba, the Secretaria de Sanidad, which is the pride of the country."

Public Health Efforts in Cuba.—The Liga contra el Paludismo, Uncinariasis y Tifoidea Rural was recently organized in Cuba under the auspices of the Public Health Service and the state department of public instruction. The president of the league is Dr. M. G. Lebredo, the secretary, Dr. A. Vieta, and each province is represented on the board, of which Dr. D. Tamayo is chairman. The official organ of the new league is to be the *Eco Cientifico,* published at Ciego de Avila.

New Ophthalmologic Journal in Mexico.—For seventeen years Dr. M. Uribe Troncoso edited the *Anales de Oftalmologia* in Mexico, but with his recent removal to New York, this journal was merged with others to form the *American Journal of Ophthalmology.* The Mexican Ophthalmologic Society, of which he was long president, has now decided to publish its own annals, and the *Anales de la Sociedad Oftalmologica Mexicana* has already made its appearance. Dr. D. M. Velez is director of the *Anales* and perpetual secretary of the society. Summaries of the two leading articles are given in both English and French, and duplicates are published on an insert for convenience of reviewers. The officers of the society for 1918 include Dr. F. Lopez, president; Dr. A. Chacon, vice president, and Dr. E. F. Montaño, perpetual treasurer.

Prizes Open to Spanish-American Physicians.—A Spanish medical journal, *Higia,* published at Madrid, offers a series of prizes for the best article on various topics. Competition is restricted to physicians and medical students of verified Spanish or Spanish-American nationality, and the articles must be sent in anonymously with the name in a sealed envelop on or before Dec. 31, 1919. The *Vida Nueva* for May reproduces all the conditions. The grand prize is for any research work yielding a positive progress for medicine. Six other prizes are offered for the medical bibliographic index of Spain or Spanish-America, from 1900 to 1920, with critical comment; for the history of medicine in Spanish-America during the fifteenth and sixteenth centuries; the Spanish race in the Spanish-American republics; and the treatment of cancer. Other prizes are offered for students. The executive committee in charge of the matter is seeking the patronage and the financial support of the government in Spain and in the different Spanish-American republics to further this prize competition as an educational and enlightening force. The amount of the prizes naturally will depend on the financial support obtained.

PARIS LETTER

Paris, May 2, 1918.

National Headquarters for Rehabilitation of Crippled and Disabled Men

In order to coordinate the work of the public authorities and the private institutions and organizations which are working for the rehabilitation of soldiers, sailors and aviators disabled by wounds received in the war or who are suffering from diseases contracted during the war, there was recently established l'Office National des mutilés et réformés de la guerre. It will be the function of this commission or office to centralize information concerning the activities of public administrations and private organizations, also to encourage and facilitate the work of readapting the military mutilés for self support; to study legislative dispositions and regulations susceptible of being taken advantage of in their favor; to follow their application, and, in a general manner, to assure them of patronage and the permanent support of the nation, which is their due. The resources of this commission or office are: (1) an annual credit included in the budget of the ministère du travail and of the prévoyance sociale; (2) gifts, donations and legacies of every kind which should be made either to the commission directly, to the *ensemble* or to a definite group of *militaires* or former *militaires mutilés et réformés.*

Determination of the Origin of the Wounds and Diseases of Soldiers

To ascertain the origin of wounds or disease is a matter of great importance to the soldiers. At present, pay is allowed only for wounds or diseases contracted or aggravated while in service. Gratuities or pensions of any kind are given only for infirmities contracted or aggravated while in service or the result of the dangers and fatigues of military life. Finally, for the wives, the death of the husband as the result of the eventualities of war, confers the right to a higher pension. Therefore, Dr. Louis Mourier, under-secretary of state for the Service de Santé militaire has sent out a circular specifying those wounds or infirmities which will be considered as having been contracted while in the service or aggravated thereby, and those which will not be so considered:

(1) Wounds or infirmities contracted while in service or aggravated thereby: All wounds or diseases proceeding from the fatigues or dangers of military service, that is to say, in relation with it, of such a nature as the interested person would not have been exposed to had he not been in the service. (2) Wounds or infirmities resulting from war operations or the eventualities of war: All lesions resulting either from a direct or indirect action of the enemy, or from participating in a premeditated action against the enemy, either preparatory to it or during the action.

(3) Wounds and diseases not incident to service: Those not included in any of the above categories, that is to say, not being caused or aggravated in any sense of the word by military service, its fatigues or dangers, such as traumatisms received and maladies contracted while on furlough or while acting contrary to orders; traumatisms received and diseases contracted outside of the service and the fault of the interested person, for which the state should not be held responsible, such as a quarrel in a saloon, accident of drunkenness; diseases the result of intemperance; hereditary diseases not aggravated by service; diseases existing prior to entrance on military service.

Hospitalization of Army Nurses Who Have Contracted Pulmonary Tuberculosis

The under-secretary of state for the Service de Santé militaire has had arranged two *formations sanitaires,* one for the military nurses who are known to have pulmonary tuberculosis, and the other for those who are suspected of having tuberculosis, or who are in a state of general exhaustion the result of disease or of hard work. The nurses who will come under this ruling will be obliged to make application, supported by a certificate "de visite et de contre-visite," to the under-secretary of state of the Service de Santé militaire.

The Bread Ration of Contagious Disease Hospitals

The attention of the food commissioner has been called to the necessity for new arrangements in regard to the bread ration of the private establishments which hospitalize contagious disease patients or those suffering from severe maladies. Usually they come to the hospital without being accompanied by any one who could dole out the daily bread tickets with which the person in question should be provided. In order to assure these patients of food, M. Victor Boret, the food commissioner, has given instructions to the prefects to invite the mayors to deliver each month to the chiefs of the establishments, who have made demand, tickets intended to replace those which the patients failed to present at the time of their admission. But, in order to avoid using tickets a second time, the chiefs of the establishments will be obliged to force these patients, the members of their family or other persons interested in them, to return the corresponding tickets to the authorities according to the number of days of their hospitalization.

Repatriation of Members of Hospital Units

All the personnel protected by the Geneva Convention will hereafter be repatriated in regular convoys every other month. The first convoy left in February for Constance; the next, in April, for Lyon, and so on alternately. As for those *sanitaires* belonging to units of which the registers or archives have been destroyed, it will suffice that the state from which they came attests to their character.

Citation of American Nurses

The professional devotion of two American army nurses, who have been recommended for the English military medal, has caused each of them to receive a personal letter from General Pershing. The nurses are, Miss Evan Jean Parmales, a reserve nurse, and Miss Beatrice MacDonald, infirmière-major, of the Presbyterian General Hospital. Each continued to care for the wounded after having been wounded herself by an air bomb.

American Libraries in Paris

The medical library of the American Red Cross has been moved to No. 12, place Vendôme. This library contains books and periodicals, both French and English, bearing on the medicine and surgery of war. On the other hand, a reference library on medical subjects has been arranged at No. 6, rue Piccini.

Inauguration of the Franco-Peruvian Hospital

Recently there was inaugurated in Paris a Franco-Peruvian hospital under the auspices of a Peruvian committee of which General Benavides, former president of Peru, is chairman. Besides the members of the Peruvian colony, representatives of the Association des Dames françaises were among those present. The hospital contains eighty beds. The expense of maintenance will be met by the Peruvian colony.

Sale of Troches and Cough Drops

Deputy Laniel having inquired of the food commissioner whether the bakers and confectioners are authorized to sell the various cough drops which can be bought at pharmacies, he received the following reply: "The *pâtes pectorales,* having only a medicinal character, can be sold only by pharmacies. Other analogous products which do not have that character are confectionery and come under the prohibition of the decree of Feb. 12, 1918."

Donation to the Academy of Medicine

The permanent secretary of the Academy of Medicine has been authorized to accept, in the name of the Academy, a legacy of 25,000 francs made by the late Dr. Magnan. The revenue from this sum will be used to establish a triennial prize to be awarded to the author of the best work on mental medicine.

The Fight Against Tuberculosis

On motion of M. Ambroise Rendu, the municipal council of Paris voted the following resolution: The Administration is invited to place at the disposition of the Rockefeller Foundation Commission on Tuberculosis rooms in the city halls and school yards in which the temporary exhibits and the conferences can be held. The Rockefeller Foundation, in pursuance of its propaganda work, recently held a series of conferences at Rennes which were exceedingly successful.

Deaths

John William Langley, Ann Arbor, Mich.; M.D. (hon.), University of Michigan, Ann Arbor, 1871; aged 76; acting assistant surgeon, U. S. Navy, 1862 to 1864; assistant professor of physics in the U. S. Naval Academy, 1867 to 1870; professor of chemistry in the Western University of Pennsylvania, Pittsburgh, 1871 to 1874; professor of chemistry and physics in the University of Michigan, from 1875 to 1889; professor of electrical engineering in the same institution from 1892 to 1905, and since that time emeritus professor of electrometallurgy; a scientist of international repute; died at his home, near Ann Arbor, May 11.

William Austin Macy, King's Park, New York City; College of Physicians and Surgeons in the City of New York, 1885; aged 55; a Fellow of the American Medical Association, and New York Academy of Medicine; superintendent of the King's Park State Hospital for the Insane, since 1904; formerly assistant superintendent of the Manhattan State Hospital, Ward's Island, and Willard State Hospital; died in the King's Park State Hospital, May 21, from cerebral hemorrhage.

Edward Thomas Abrams, Dollar Bay, Mich.; Dartmouth Medical School, Hanover, N. H., 1888; aged 57; a Fellow of the American Medical Association; appointed a member of the State Board of Health in 1911, and at the time of his death president of the board; for several years a member of the state legislature; one of the most prominent and esteemed practitioners of the Copper Country; died at his home, May 21, from heart disease.

Wallace Eugene Hallock, Juneau, Wis.; University of Michigan, Ann Arbor, 1873; aged 71; a member of the State Medical Society of Wisconsin; president of the Dodge County Medical Society; county physician of Dodge County for forty years; and once mayor of Juneau; while visiting Rockford, Ill., May 20, was struck by a street car and died in a hospital in Rockford from his injuries a few hours later.

Martin Stamm, Fremont, Ohio; University of Berne, Switzerland, 1872; aged 70; a Fellow of the American Medical Association; and president of the Sandusky County Medical Society; for several years professor of operative surgery in the College of Physicians and Surgeons, Cleveland; for two terms a member of the local board of education; died at his home, May 22, from heart disease.

Died in the Service
in France
Lieut. Whitney H. Joyce, M. R. C., U. S. Army, 1891-1918

Lieut. John Groat Corson, M. R. C., U. S. Army, Binghamton, N. Y.; University of Syracuse, N. Y., 1915; aged 27; who had been on duty with a medical detachment of the British Expeditionary Forces in France, and there contracted tuberculosis and was invalided to England, died in a hospital in London, about May 17, from tuberculosis.

William F. Creasy, Newport News, Va.; University of Maryland, Baltimore, 1890; aged 54; a Fellow of the American Medical Association; formerly president of the City Board of Health, and quarantine officer of the port of Newport News; died at his home, about May 18.

Boyle Travers, St. John, New Brunswick; Dublin, 1847; William Stokes prize-man; aged 93; a member of the New Brunswick and St. John, New Brunswick, Medical Society; who began practice in St. John in 1848; died at his home in that city, April 7, from senile debility.

Edward T. Pendleton, Wellsville, Kan.; University Medical College, Kansas City, Mo., 1899; aged 44; a member of the Kansas Medical Society; who was operated on about three months ago at St. Luke's Hospital, Kansas City, for the removal of gallstones; died May 13.

Joseph E. Heard, Baltimore; College of Physicians and Surgeons, Baltimore, 1882; aged 65; surgeon of the Police Department from 1888 to 1900, and a health warden of Baltimore from 1908 to 1918; died in the Church Home and Infirmary in that city, May 21.

Lieut. Whitney Hotaling Joyce, M. R. C., U. S. Army, Unadilla, N. Y.; Albany, N. Y., Medical College, 1913; aged 28; a Fellow of the American Medical Association; who was on duty with the Royal Warwickshire Regiment, British Expeditionary Forces; died in France, from wounds, May 17.

Capt. Frederick David Clair, M. R. C., U. S. Army, Philadelphia; Medico-Chirurgical College of Philadelphia, 1915; aged 27; attached to the Forty-Third Field Ambulance, British Expeditionary Forces in France; is reported to have been killed in action recently.

Herbert Aaron Lord, Pueblo, Colo.; Gross Medical College, Denver, 1898; aged 45; a Fellow of the American Medical Association; county physician of Saguache County, Colo., for several years; died in St. Mary's Hospital, Pueblo, May 15, from cerebral hemorrhage.

Hamilton Earle Russell, Easley, S. C.; Southern Medical College, Atlanta, Ga., 1895; aged 48; a Fellow of the American Medical Association; local surgeon for the Southern Railroad; died suddenly while making a professional call, May 16.

John Snyder McPheeters, Hardinsburg, Ind.; Cincinnati College of Medicine and Surgery, 1860; aged 81; assistant surgeon and later surgeon of the twenty-third Indiana Volunteer Infantry, during the Civil War; died at his home, May 11.

Stephen William Driver, Cambridge, Mass.; Harvard Medical School, 1863; aged 85; a member of the Massachusetts Medical Society; a veteran of the Civil War; consulting physician to the Cambridge Hospital; died at his home, May 21.

James Piner Bartley, Bartlesville, Okla.; Kentucky School of Medicine, Louisville, 1898; aged 51; a Fellow of the American Medical Association; died in the Bartlesville City Hospital, May 20, from cerebral hemorrhage.

Benjamin J. Alexander, Hiawatha, Kan.; Drake University, Des Moines, Iowa, 1882; aged 62; a Fellow of the American Medical Association; and formerly a member of the State Board of Health; died at his home, May 20.

James H. Roll, Hamilton, Ohio; Medical College of Ohio, Cincinnati, 1872; aged 72; a member of the Ohio State Medical Association; a veteran of the Civil War; died at his home, May 16, from cerebral hemorrhage.

Merritt Byron Fairchild, Syracuse, N. Y.; Albany, N. Y., Medical College, 1868; aged 79; health officer of Syracuse for two terms, and for four years physician to the state penitentiary; died at his home, May 16.

William Kennedy, Hamilton, Ont.; Trinity Medical College, Toronto, 1875; aged 70; formerly president of the Conservative Association of Norfolk County; died at the home of his daughter in Hamilton, May 16.

Lieut. Edward Everett Tredway, M. R. C., U. S. Army, Pasadena, Calif.; Denver and Gross College of Medicine, Denver, 1908; aged 39; a Fellow of the American Medical Association; died May 19.

Joseph J. Evans, Winchester, Ind. (license, Indiana, 1897); aged 78; a practitioner of Winchester since 1867; for eight successive terms coroner of Randolph County; died at his home, May 16.

Willie Estes Cobb, Blytheville, Ark.; Louisville, Ky., National Medical College, 1904; aged 43; a colored practitioner; was shot and killed, May 9, in an altercation over boundary lines.

Charles E. Thompson, Stephens, Ark.; Kentucky University, Louisville, 1906; aged 37; a member of the Arkansas Medical Society; died at his home, May 17, from tuberculosis.

Samuel Kennedy Christy, Willshire, Ohio; Medical College of Ohio, Cincinnati, 1880; aged 65; formerly a Fellow of the American Medical Association; died at his home, May 16.

Theodore Milan, Davenport, Iowa; (license, Iowa, 1890); aged 63; died in Mercy Hospital, Davenport, May 17.

Joseph Henry Martin, Los Angeles, Calif.; Dartmouth Medical School, Hanover, N. H., 1871; aged 75; for thirty-three years a resident of Los Angeles; died at his home, May 9.

Adolph Boppart, Richmond, Ind.; University of Zurich, Switzerland, 1856; aged 82; for more than fifty years a pharmacist of Richmond; died at his home, May 13.

H. C. Hollingsworth, Terre Haute, Ind.; Rush Medical College, 1864; aged 75; a veteran of the Civil War; died at his home, March 7, from malignant disease.

Archibald Yhel Martin, Moundsville, W. Va.; Kentucky School of Medicine, Louisville, 1890; aged 57; died at his home, May 17, from disease of the kidney.

Luke H. Kelly, Hammond, Ind.; University of Illinois, Chicago, 1899; a member of the Indiana State Medical Association; died at his home, May 16.

Lewis E. Meeker, Brooklyn; Detroit Medical College, 1872; aged 67; formerly president of the Eastern District Savings Bank; died at his home, May 23.

William W. Roberts, Athens, Ga.; Medical College of Georgia, Augusta, 1891; aged 73; died at his home, at Princeton, near Athens, May 16.

Rebecca H. Reynolds Longshore, National City, Calif.; Pennsylvania Medical University, Philadelphia, 1861; aged 81; died at her home, April 17.

Albert J. Cavert, Nashville, Tenn.; University of Nashville, Tenn., 1872; for many years a teacher in the city schools of Nashville; died about May 11.

H. B. Godby, College Park, Ga.; Atlanta, Ga., Medical College, 1859; aged 86; died at his home, April 9, from paresis following pneumonia.

John Parker Cartwright, Bowling Green, Ky.; Bellevue Hospital Medical College, 1882; aged 67; died at his home, May 9, from carcinoma.

William Hall Carleton, Toronto, Ont.; University of Toronto, 1883; aged 62; died at his home, February 14, from cerebral hemorrhage.

John Newton, Deseronto, Ont.; Queens University, Kingston, Ont., 1866; aged 75; died at his home, February 13, from arteriosclerosis.

Robert Milliken Davis, Wrightsville, Pa.; University of Pittsburgh, 1897; aged 57; died at his home, March 23, from cerebral hemorrhage.

Charles Francis Adams Walsh, New York City; Long Island College Hospital, Brooklyn, 1895; aged 55; died at his home, March 18.

Freeman Hall, Kalamazoo, Mich.; Medical School of Maine, Portland, 1855; aged 84; died at his home, March 30, from acute cystitis.

David B. Snodgrass, Marion, Ind.; Physio-Medical College, Cincinnati, 1878; aged 81; died at his home, May 11, from heart disease.

Owen Franklin Person, Hazelton, Pa.; Jefferson Medical College, 1872; aged 69; died at his home, May 11, from chronic nephritis.

Edward Chapman Hayman, Lincoln, Neb.; University of Nebraska, Omaha, 1908; aged 34; died at his home, March 13.

Isaac A. Wesson, Wingo, Ky.; Vanderbilt University, Nashville, Tenn., 1881; aged 79; died at his home, May 14.

Edward Channing Folsom, Santa Monica, Calif.; Harvard Medical School, 1868; aged 73; died at his home, May 11.

John Perrins, Boston; Eclectic Medical Institute, Cincinnati, 1873; aged 79; died at his home, May 17.

Marriages

Lieut. Louis Tompkins Wright, M. R. C., U. S. Army, Atlanta, Ga., on duty at Camp Upton, N. Y., to Miss Corinne M. Cooke of New York City, May 16.

Jesse Willis Amey, New York City, to Miss Grace May Hoffman of Schenectady, N. Y., May 8.

Squire Wilbert Stone, to Miss Julia Louise Des Loges, both of New York City, May 21.

Thomas J. Cummins, Mineville, N. Y., to Miss H. Densey Mitchell of Baltimore, April 22.

Victor I. Englert, to Mrs. Cora Kors, both of Chicago, May 23.

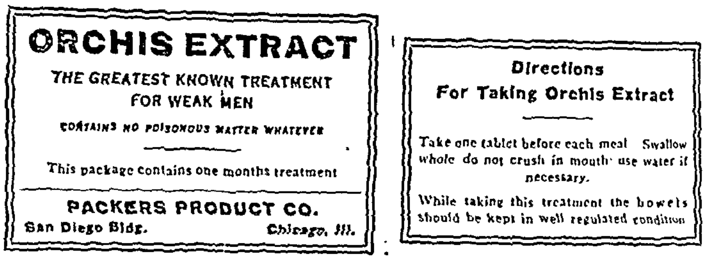
The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

PACKERS PRODUCT COMPANY DECLARED A FRAUD

The Federal Authorities Close the Mails to a Fakish Concern

The Packers Product Company, San Diego Building, 311 River Street, Chicago, was the name under which one Fred A. Leach sold a nostrum, "Orchis Extract." The sales were made on the mail-order plan. In December, 1917, Leach was called on by the federal authorities to show cause why a fraud order should not be issued against his business and Jan. 10, 1918, was fixed as the date for the hearing. His attorney, Frank H. Repetto of Chicago, made application that the case be continued to January 14. On January 11 a written answer was submitted by the attorney accompanied by certain exhibits. These were carefully considered, together with the evidence against Leach. As a result the mails were closed to the Packers Product Company.



ORCHIS EXTRACT
THE GREATEST KNOWN TREATMENT FOR WEAK MEN
CONTAINS NO POISONOUS MATTER WHATEVER
This package contains one months treatment
PACKERS PRODUCT CO.
San Diego Bldg. Chicago, Ill.

Directions
For Taking Orchis Extract
Take one tablet before each meal Swallow whole do not crush in mouth use water if necessary.
While taking this treatment the bowels should be kept in well regulated condition

Reproduction in miniature of the labels on the boxes in which "Orchis Extract" was mailed.

Judge Lamar, Solicitor for the Post Office Department, in his memorandum to the Postmaster-General recommending the issuance of a fraud order, declared the facts regarding the Packers Product Company to be, in part, as follows:

A MISLEADING NAME

"The business complained of consists of the sale of a preparation known as 'Orchis Extract' by means of representations made through the mails in furtherance of a scheme to defraud. Fred A. Leach is the promoter of this scheme and operates it under the name Packers Product Company. This trade name was obviously selected and is continuously used for the purpose of leading persons to believe that they are dealing with a responsible concern engaged in the meat packing business and utilizing one of its by-products in the alleged manufacture of the aforesaid preparation which is offered to the public as a curative agent in cases of lost sexual power and kindred ailments. This purpose is clearly evidenced (1) by the name itself and (2) by the print of buildings and pens enclosing cattle on the back cover of the booklet and upon the form letters [See illustration accompanying this article.—Ed.] distributed to the public through the mails and carrying representations hereinafter referred to concerning the alleged curative properties of said preparation.

"The name 'Packers Product Company' is misleading for the reasons above set forth and the word 'manufacturers of Orchis Extract' are false, for the evidence shows that this respondent is not a manufacturer of this extract but the remedy sold by him and alleged to contain this substance is purchased by respondent from various manufacturing chemists. The print thus used with intention to mislead and thereby induce persons to purchase the preparation represents in fact some of the packing house buildings and slaughter pens of Armour and Company at Chicago, Illinois, in which this respondent has no interest and from which he buys none of the ingredients used in the compounding of the said preparation.

"'Orchis Extract' is said to be a substance obtained from the testicles of rams. A chemical analysis made by the Bureau of Chemistry of the Department of Agriculture shows that Orchis Extract Tablets, the preparation sold by respondent, consists of sugar of milk, orchitic animal tissue, and agents used in compressing the tablets."

FALSE AND RIDICULOUS CLAIMS

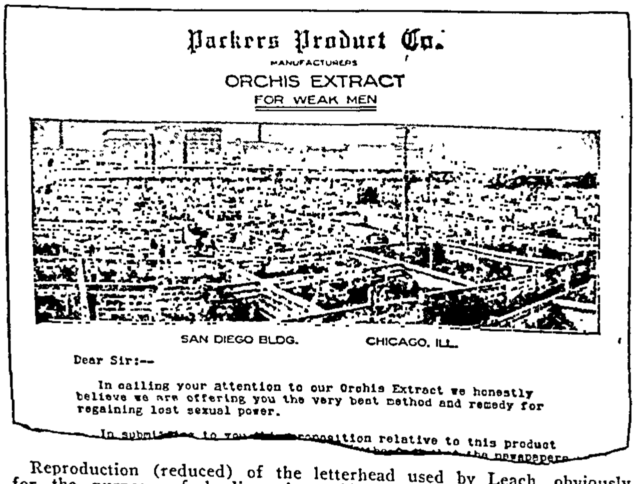
The Solicitor then quotes extensively from the advertising booklet sent out by Leach. Some of the characteristic claims follow:

> "Pre-senility, or premature old age, is a condition which can in most cases be relieved by a careful and conscientious treatment of Orchis Extract."
>
> "Orchis Extract has a special action on the glands of the reproductive organs."
>
> "Its action is that of a great vitalizer—tending to increase their activity, to aid their secretory functions and promote the normal development. It is specifically indicated in cases of atrophy of the private organ so common in cases of sexual abuses. Orchis Extract operates in a most remarkable manner in overcoming these conditions."
>
> "Orchis Extract, when introduced into the blood, should bring about a richer supply of blood so that the cold and shrunken parts of the body must return to vigor and vitality; ambition will be restored by stronger and healthier nerve tissues and muscles, and relief or a cure is sure to follow."
>
> "Orchis Extract is a reliable compound for restoring lost vitality, renewing cell life, resulting in restoring life, strength and development to the organs of man."
>
> "Orchis Extract is being successfully used in cases of Nervo-Sexual Troubles, such as Nervous Debility, Lost Manhood, Night Losses, and Undeveloped Parts. It is for the weak man, for the debilitated man, for every man who needs a reliable remedy to renew his life and vitality, enrich the blood, tone up the stomach and aid digestion, to soothe the nerves, to overcome vital exhaustion, to stimulate the liver and kidneys and to send new energy and new sustenance to every cell and tissue of the body. To nourish the brain, strengthen the memory and to renew life with health and strength."

WHAT THE EVIDENCE SHOWED

Judge Lamar's memorandum continues:

"The evidence shows the diseases and diseased conditions for which this remedy is recommended cannot be relieved or cured by its use; that the remedy taken internally can have no effect whatever on such diseases and diseased conditions, and that it is of no value in their treatment; that the condition known as 'Lost Manhood' may arise from various causes, and that no one remedy even if assumed to possess medicinal virtue could reach all of these various causes and relieve and cure the conditions arising therefrom; and that the respondent, unskilled in the science and practice of medicine, cannot determine the condition from which the patron may be suffering or its superinducing cause, and cannot unless by accident furnish a remedy that will give relief and effect a cure.



Packers Product Co.
MANUFACTURERS
ORCHIS EXTRACT
FOR WEAK MEN

SAN DIEGO BLDG. CHICAGO, ILL.

Dear Sir:--

In calling your attention to our Orchis Extract we honestly believe we are offering you the very best method and remedy for regaining lost sexual power.

In submitting to you the proposition relative to this product

Reproduction (reduced) of the letterhead used by Leach, obviously for the purpose of leading the public to think that the packers' (Armour's) whose plant is here shown, were behind the business. As a matter of fact, Armour's had repeatedly protested aganst this misuse of their name and were to no small extent responsible for putting the fraud out of business.

LEACH AN OLD OFFENDER

"Fred A. Leach, the promoter of this scheme, has been in the mail-order business from 15 to 20 years. The evidence shows that he was manager of the Distributors Guarantee Association, against which a fraud order was issued May 8, 1908; that he sold vacuum developers for the enlargement of the male organ under the name of the Vacuum System and David Kuno, Chicago, Illinois; that he also operated under the name of the Ausin System and E. D. Ausin, Chicago, handling vacuum developers, and that in 1912 and 1913 he sold vacuum developers under the name of Martin W. Wade and Wade Manufacturing Company, Chicago, Illinois.

"The respondent requests that he be allowed to continue the business in question using revised literature, and has indicated the revision intended by striking out certain parts of the literature now in use. Since the testimony shows that the preparation is of practically no value in the treatment of the diseases and conditions for which it is recommended, this request must be denied.

"The postmaster at Chicago, Illinois, reports that on an average 15 pieces of mail are daily received at his office addressed to this concern.

"I find that this is a scheme for obtaining money through the mails by means of false and fraudulent pretences, representations and promises, and therefore recommend that a fraud order be issued against the Packers Product Company, at San Diego Building and 311 River Street, Chicago, Illinois."

A fraud order was issued April 4, 1918.

Correspondence

BARBOUR'S LINEN FLAX THREAD AS A SUBSTITUTE FOR PAGENSTECHER THREAD

To the Editor:—As Pagenstecher thread, used by many surgeons in gastric and intestinal work, has not been imported for many months, the supply has become practically exhausted. It may be of interest, therefore, for those who have not found a satisfactory substitute, to know that Barbour's linen flax thread is stronger, smoother and a much better product than Pagenstecher linen. This material can be obtained in almost any size, at 18 cents per spool of 200 yards, as compared with 20 cents per skein of 50 yards for Pagenstecher thread (less than one quarter the price). No. 60 or 70 is a satisfactory size for intestinal work. The war has demonstrated that with little inconvenience we can dispense with practically everything we formerly used bearing the label, "Made in Germany," and linen thread for surgical work is no exception. I do not know where Barbour's thread is made, but believe it comes from Ireland. I do know, however, that it can be obtained in any department store.

Stephen E. Tracy, M.D., Philadelphia.

OIL INUNCTION IN PREVENTION OF PLAGUE: A SUGGESTION OF A CENTURY AGO

To the Editor:—Anent the article by Dr. George Homan in The Journal, May 11, 1918, on "Protection Against Lice," a quotation from an old book on "Plague and Yellow Fever" in my possession may be of interest. The title page of this book has been lost so I cannot give either the name of the author or the date of its publication; but from references and quotations it was probably printed about the year 1800 and it has the long f-like letter s. Under the head of the treatment of plague, on page 341, the author says:

> But of late a discovery has been made of a surprising power in heated oil of removing this disease, insomuch that, if we can believe what has been published of it, we must suppose it to be little less than a specific. So great indeed has been the confidence put in this method that, by order of the Academy of Sciences of Lisbon, it has been translated into Arabic, French and Portuguese.

Then follows a long extract from an Edinburgh medical journal, the *Annals of Medicine* for 1797, page 373, saying: "The method was first proposed by George Baldwin, Esq., agent of his Britannic Majesty, consol-general at Alexandria." Then follows a page of directions how to use oil by inunction in treating plague, and on page 343 is this statement:

> There is no instance of the person rubbing a patient having taken the infection. He should previously anoint himself all over with oil, and must avoid receiving the infected person's breath into his mouth

and nostrils. The precaution to be used in all circumstances is that of carefully anointing the body and living upon a light and easily digested food. Mr. Baldwin observes that among upwards of a million of people carried off by the plague in Upper and Lower Egypt in the space of four years, he could not discover a single oilman or dealer in oil.

Now that we know the rôle played by the bite of fleas and lice in causing plague, typhus and trench fever, reason would seem to justify the experimental use of oil by inunction in the prevention of these diseases.

S. W. Dickinson, M.D., Marion, Va.

CONTRIBUTIONS FOR BELGIAN AND FRENCH PHYSICIANS

To the Editor:—I beg to acknowledge the following contributions in money and instruments for the Belgian and French civilian doctors to aid them when they return to their devastated homes.

SUBSCRIPTIONS IN CASH

Dr. J. J. Edmonson, New York	$ 5.00
Dr. Clarence T. Faries, Narberth, Pa. (second, third and fourth monthly contributions)	30.00
Dr. Horace Gray, Camp Devens, Fitchburg, Mass.	5.00
Dr. William B. Reed, Rochester, N. Y.	10.00
Total	$50.00

INSTRUMENTS

Dr. John M. Ball, St. Joseph, Mo.; Dr. A. S. Doloff, Lewiston, Maine; Dr. J. Hall Allen, Philadelphia; Dr. A. F. Radzinski, Detroit; Dr. G. V. Janvier, Lansdowne, Pa.; Dr. DeWitt C. Rodenhurst, Philadelphia, N. Y.; one package of instruments, name of donor unfortunately mislaid; Dr. W. W. Keen, Philadelphia.

Messrs. Harvey R. Pierce & Co. have very kindly taken charge of the instruments and packed them carefully for shipment.

W. W. Keen, M.D., Philadelphia.

SIMPLE METHOD OF MAKING CURVED NEEDLES

To the Editor:—Owing to the scarcity of round curved needles, Langston Brothers, jewelers of Hamlet, N. C., have been making curved needles for the Hamlet Hospital by taking ordinary needles and bending them over an alcohol flame. This can be done by catching each end of the needles with a pair of pliers and gradually bending the needles over an alcohol flame. It takes about twenty seconds to make a curved needle out of a straight one.

W. D. James, M.D., Hamlet, N. C.
Surgeon in Charge, Hamlet Hospital.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

INSURANCE AND COMPENSATION

To the Editor:—May I ask you to describe the features of the insurance bill as it applies to medical men in active service? The points on which I should like information are the following: amount that must be carried; amount that may be carried; the rate—say at the age of 36—per thousand dollars. Does insurance remain in force after military service ceases; if so, how long? Does insurance entirely replace any other "pension" allowances to dependents in case of death? What provision is made for payment of "pension" in case of permanent or total disability incurred in line of duty? Please do not publish my name.

R. N. C., Cleveland.

To the Editor:—Will you please answer the following questions relative to the insurance and compensation law? Does Article II, relating to allotments and family allowances for enlisted men, apply to officers of the Medical Reserve? What is the cost of a $10,000 policy at the age of 45? Please omit my name.

E. L. S., Montana.

To the Editor:—Can a medical officer resign from the service after taking the oath? When does his pay begin? When does it stop? Will those in Europe be returned home or be discharged over there to make their way home the best way they can? Does the government give any form of insurance that could be collected in bulk so that the wife would have enough to do something with, or is it all on the monthly payment plan that would keep her practically a dependent pauper—a sum that no family could live on and have money to do anything with? Does an officer's family have any other allowance than his salary and commutation as do the privates? Will there be any insurance or pensions for officers' disabilities?

F. R. DeHoney, M.D., Fredericktown, Mo.

Answer.—Medical officers in active service may carry government insurance, but are not required to do so. They are allowed to carry from $1,000 to $10,000, the monthly rate on $1,000 varying as shown in the accompanying table:

Years.	Monthly Premium	Years.	Monthly Premium
25	$0.66	41	$ .82
26	.67	42	.84
27	.67	43	.87
28	.68	44	.89
29	.69	45	.92
30	.69	46	.95
31	.70	47	.99
32	.71	48	1.03
33	.72	49	1.09
34	.73	50	1.14
35	.74	51	1.20
36	.75	52	1.27
37	.76	53	1.35
38	.77	54	1.44
39	.79	55	1.53
40	.81		

In case of total or permanent disability the insured receives $5.75 per month per thousand dollars of insurance; this is continued as long as the insured lives or as long as disability continues. In case of death the beneficiary will receive $5.75 per month for 240 months for each thousand dollars of insurance less any payments made to the insured for total and permanent disability. The benefits are not paid in a lump sum. After the war the insurance is convertible, within five years, to any of the standard types of insurance, such as life, twenty payment life, or endowment. The premiums increase annually during the war as the age increases until the insured changes to one of the permanent forms, when the premium will depend on the plan then chosen. The permanent insurance after the war will be government insurance. During the war it will have no cash value or loan value, but the permanent insurance after the war will have such value. The insurance must be applied for within 120 days after entrance into active service.

In addition to the government insurance there is compensation payable to officers injured or disabled when on active duty. This is payable for death or disability resulting from personal injury suffered or disease contracted in line of duty, unless caused by the person's own wilful misconduct, the sum varying from $30 to more than $100 monthly, according to the number of dependents.

DICHLORAMIN-T

To the Editor:—In The Journal, April 27, 1918, p. 1212, appeared an article entitled "Dakin's Dichloramin-T Solution for Ocular Infections." 1. Please inform me as to where I can obtain this preparation. I have been using the Carrel-Dakin solution, but, as stated in the article, it is too irritating, and I should like to try this preparation. 2. Please inform me as to the method of preparation, and what oil it is put in. 3. What is the meaning of the "T."

D. M. Randel, Muskogee, Okla.

Answer.—Dichloramin-T may be obtained from the Abbott Laboratories, Chicago, the Calco Chemical Company, Bound Brook, N. J., and the Monsanto Chemical Company, St. Louis (see New and Nonofficial Remedies, 1918, p. 159 and the N. N. R. department of The Journal, April 6, 1918, p. 999).

2. For use, dichloramin-T is dissolved in chlorinated eucalyptol, and this solution is diluted with chlorinated paraffin (see New and Nonofficial Remedies, 1918, p. 80), or the dichloramin-T may be dissolved in chlorcosane (see the N. N. R. department of The Journal, Feb. 16, 1918, p. 459, and May 18, 1918, p. 1459).

3. Dichloramin-T is the parasulphonedichloramid of toluene; the "T," for "toluene," distinguishes it from similar compounds that have been or may be made from benzene, xylene, etc.

SANATORIUMS THAT CARE FOR PATIENTS WITH TICS

To the Editor:—Please give me the names and addresses of sanatoriums that have had particular success in caring for patients with spasmodic functional tics.

X. Y. Z.

Answer.—The Journal will be glad to hear of institutions, preferably in the West, that are fitted to care for cases of this character.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alabama: Montgomery, July 9. Chairman, Dr. S. W. Welch, State Capital, Montgomery.

Arizona: Phoenix, July 2. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.

California: San Francisco, June 25. Sec., Dr. C. B. Pinkham, State Capitol, Sacramento.

Colorado: Denver, July 2. Sec., Dr. D. A. Strickler, 612 Empire Bldg., Denver.

Connecticut: New Haven, July 9-10. Sec. Regular Bd., Dr. Chas. A. Tuttle, 196 York St., New Haven; Sec. Eclectic Bd., Dr. J. E. Hair, 728 State St., Bridgeport; Sec. Homeo. Bd., Dr. E. C. M. Hall, 82 Grand Ave., New Haven.

Delaware: Wilmington, June 18-20. Sec., Dr. H. W. Briggs, Wilmington, Del.

District of Columbia: Washington, July 9-11. Sec., Dr. E. P. Copeland, The Rockingham, Washington.

Florida: (E): Jacksonville, June 10-11. Sec., Dr. G. A. Munch, Tampa.

Florida (Regular): Jacksonville, June 17-18. Sec., Dr. W. M. Rowlett, 812 Citizens Bk. Bldg., Tampa.

Indiana: Indianapolis, June 13-15. Sec., Dr. W. T. Gott, 84 State House, Indianapolis.

Kansas: Topeka, June 18-19. Sec., Dr. H. A. Dykes, Lebanon.

Maine: Augusta, July 2-3. Sec., Dr. Frank N. Searle, 776 Congress St., Portland.

Maryland: Baltimore, June 18-22. Sec., Dr. J. McP. Scott, Hagerstown.

Michigan: Ann Arbor, June 11-13. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

Missouri: St. Louis, June 17-19. Sec., Dr. George H. Jones, State House, Jefferson City.

New Hampshire: Concord, June 24-25. Sec., Dr. W. T. Crosby, Manchester.

New Jersey: Trenton, June 18-19. Sec., Dr. Alex. MacAlister, Trenton.

North Carolina: Raleigh, June 24-28. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.

North Dakota: Grand Forks, July 2. Sec., Dr. G. M. Williamson, Grand Forks.

Oklahoma: Oklahoma City, July 9-10. Sec., Dr. J. J. Williams, Weatherford, Okla.

Oregon: Portland, July 2. Sec., Dr. Herbert S. Nichols, 802 Corbett Bldg., Portland.

Pennsylvania: Philadelphia and Pittsburgh, July 9-13. Sec., Dr. N. C. Schaeffer, State Capitol, Harrisburg.

Rhode Island: Providence, July 11. Sec., Dr. B. U. Richards, State House, Providence.

South Carolina: Columbia, June 11. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

South Dakota: Deadwood, July 9. Sec., Dr. P. B. Jenkins, Waubay.

Tennessee: Knoxville, Memphis and Nashville, June 14-15. Sec., Dr. A. B. DeLoach, Exchange Bldg., Memphis.

Texas: Austin, June 18-20. Sec., Dr. M. F. Bettencourt, Mart.

Utah: Salt Lake City, July 1-2. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.

Vermont: Burlington, June 10-12. Sec., Dr. W. Scott Nay, Underhill.

Virginia: Richmond, June 18-21. Sec., Dr. J. W. Preston, Roanoke.

Washington: Tacoma, July 2. Sec., Dr. C. N. Suttner, 415 Old Nat'l Bldg., Spokane.

West Virginia: Wheeling, July 9. Health Com., Dr. S. L. Jepson, Masonic Bldg., Charleston.

Wisconsin: Milwaukee, June 25-27. Sec., Dr. J. M. Dodd, Ashland.

Connecticut Homeopathic Report

Dr. E. C. M. Hall, secretary of the Connecticut Homeopathic Medical Examining Board, reports that 2 candidates have been licensed through reciprocity since Jan. 1, 1918. The following colleges were represented:

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Boston University	(1909)	Minnesota
New York Homeopathic Medical College	(1917)	New York

Maine March Examination

Dr. Frank W. Searle, secretary of the Maine Board of Registration in Medicine, reports the written examination held at Portland, March 12-13, 1918. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 19 candidates examined, 17 passed and 2 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Bowdoin Medical School	(1918)	85, 85, 86, 86, 87, 88, 88, 89, 89, 89, 89, 90, 90, 91, 94.
Harvard University	(1918)	87
McGill University	(1896)	85
FAILED		
Chicago College of Medicine and Surgery	(1908)	*
Harvard University	(1918)	*

* No grade given.

Medicolegal

Removing Superfluous Hair with Electric Needle Is Practicing Medicine

(Engel v. Gerstenfeld (N. Y.), 168 N. Y. Supp. 434)

The Supreme Court of New York, Appellate Term, Second Department, reverses a judgment obtained by the plaintiff for a balance claimed to be due for the removal with the electric needle of superfluous hair from the face of the defendant's niece, a Miss Abrams, because the plaintiff, not being a licensed and registered physician, in undertaking to treat Miss Abrams for the growth of hair on her face, violated the provision of the public health law regulating the practice of medicine. Justice Benedict holds that, as the plaintiff committed a misdemeanor in undertaking to treat the "deformity" or "physical condition" of the skin of Miss Abrams, the plaintiff was not entitled to recover in this action. Justice Clark concurs in the result, on the ground that the plaintiff practiced medicine, in that, following the definition of the statute, she held herself out as being able to diagnose, treat, and operate for a certain physical condition, and undertook to diagnose, treat, and operate for such physical condition. Justice Callaghan dissents.

Justice Benedict says the "practice of medicine" is defined in the statute as follows:

> A person practices medicine within the meaning of this article, except as hereinafter stated, who holds himself out as being able to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition, and who shall either offer or undertake, by any means or method, to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition.

The growth of hair on Miss Abram's face when she went to the plaintiff was a "deformity" or a "physical condition," of which she, or the defendant, desired the aid of the plaintiff in the treatment and cure; and the plaintiff clearly held herself out to them as being able to treat it successfully, and did undertake to treat it with an instrument known as an electric needle. The statute plainly means that a person holds himself out as being able and willing to diagnose or treat any human disease or "deformity" or "physical condition" when he represents or states to a patient that he possesses the skill or ability requisite for the case. It is not essential that the "holding out" should be by way of public announcement. If there be a "holding out" of oneself as willing to undertake the treatment and able to administer it, then it follows that this constitutes the practice of medicine within the terms of the statute. Nor can it be said that the removal of hair from the face of a woman by the use of an electric needle does not properly come within the category of the practice of medicine any more than the removal of hair from the face of a man by the use of a razor would. Bouvier's Law Dictionary, speaking of surgery, says, "The practice of surgery is limited to manual operations usually performed by surgical instruments or appliances." The use of an electric needle would obviously come within this definition.

The definition of the term "practice of medicine" contained in the statute may be thought by some persons to be highly artificial. It includes, and was designed to include, many things not popularly considered as medical practice. But the wisdom of the law, if it be constitutional, is a matter for the consideration of the legislature and not of the courts. It may well be argued that four years of medical study, including a thorough knowledge of anatomy, materia medica, hygiene, etc., in all their branches, are not requisite to equip a person properly to remove superfluous hair alone. Yet it can hardly be contended that persons engaging in that occupation should be subject to some sort of regulation to insure proper skill and sanitation, such at least as the regulations affecting the practice of chiropody. The legislature has seen fit to set a much higher standard, and until the statute herein discussed is amended or abrogated, the courts have no discretion but to enforce it.

Society Proceedings

COMING MEETINGS

American Medical Association, Chicago, June 10-14.

Alpha Omega Alpha Society, Chicago, June 10.
American Association of Anesthetists, Chicago, June 10-11.
Am. Assn. of Industrial Physicians and Surgeons, Chicago, June 10.
American Ophthalmological Society, New London, Conn., July 9-10.
American Proctologic Society, Chicago, June 10-11.
American Surgical Association, Cincinnati, June 6-8.
American Therapeutic Society, Richmond, Va., June 7-8.
Idaho State Medical Association, Seattle, July 17-19.
Massachusetts Medical Society, Boston, June 18-19.
Montana Medical Association, Butte, July 10-11.
Nat. Assn. for the Study and Prev. of Tuberculosis, Boston, June 6-8.
New Jersey Medical Society, Spring Lake, June 25-26.
North Dakota State Medical Association, Fargo, June 19-20.
Oregon State Medical Association, Seattle, July 17-19.
Southern Minnesota Medical Association, Winona, Minn., June 24-25.
Washington State Medical Association, Seattle, July 17-19.
Western Roentgen Society, Colorado Springs, June 27-28.

ASSOCIATION OF AMERICAN PHYSICIANS

Thirty-Third Annual Meeting, Held at Atlantic City, N. J., May 7-8, 1918

Dr. F. H. Williams, Boston, in the Chair

Instructions in Treatment

Dr. F. H. Williams, Boston: The young practitioner has many difficulties in adapting the details of pharmacology and therapeutics to practice. Students should be taught by men with long clinical practice and in that way learn to bridge the gap between materia medica and therapeutics, on the one hand, and the practice of medicine on the other. More opportunities for bedside instruction should be offered. The student should be taught when to give powerful remedies and when not. The man who brings sleep to the patient without resorting to hypnotics, or alleviates pain without prescribing morphin, who, in other words, accomplishes results by simple means, is learning to be master of his art.

Intravenous Use of Arsphenamin in Syphilis of the Nervous System

Dr. Bernard Sachs, New York: Four hundred patients were treated intravenously with the Philadelphia preparation of arsphenamin, which has proved entirely satisfactory. I am convinced that much good will be accomplished by the intravenous treatment, which is safe in the hands of the majority of physicians. All biologic tests must be used as corroborative evidence, and clinical evidence must not be disregarded. The lack of serologic evidence does not always disprove syphilis, nor is there a parallel between clinical symptoms and serologic findings, as remissions are often observed without serologic change, and serologic improvement is not always accompanied by clinical betterment. It is only in types with vascular lesions that the clinical findings and serologic tests progress *pari passu*. In general paresis and tabes, the chief lesions are deep in the brain and cord, far removed from the spinal fluid, and only to be reached by the blood stream. In the meningomyelitic type of involvement it is impossible for the curative substances to remain in the fluid long enough to do any good. I do not hold the doctrine of the impermeability of the choroid plexus. The pressure in the cerebral capillaries being higher than in the fluid, a metallic substance like arsphenamin is rapidly absorbed into the venous system. Why, therefore, should not the venous system be used at once? Intraspinal medication is theoretically and essentially unsound. It is fatal to the syphilitic organism, but frequently also to the patient. Early and intensive treatment is necessary, a dose being given every other day for from four to six weeks, followed by a period of complete rest. Forty or fifty injections may be required within a year. It would be impossible to introduce toxic substances so frequently into the canal. No claim can be made for the cure of tabes dorsalis or general paresis by the intraspinal method; the most that can be said is that remissions may be longer. It is urged that treatment be begun as early as possible and continued for years after the initial lesion, and that the patient be kept under medical control for as long as necessary. The hope of the future lies in the discovery of a substance less toxic than arsphenamin with which a more intensive treatment can be undertaken.

DISCUSSION

Dr. S. J. Meltzer, New York: In regard to the permeability or impermeability of the choroid plexus we have no exact knowledge. Benedict found arsphenamin (salvarsan) in the spinal fluid, but no doubt not in such quantities as if injected intraspinally. Swift's work was conservative, and he never overemphasized his claim. He used not merely arsphenamin, but arsphenamized serum. Is there any objection to giving intraspinal treatment at the same time as intravenous, provided it does no harm? With meningitis both intravenous and intraspinal injections should be used.

Dr. William H. Park, New York: In regard to tetanus antitoxin, one can absolutely show that the intraspinal injection will protect and cure, while the intravenous alone will not. The two are given simultaneously.

Dr. Bernard Sachs, New York: In reply to Dr. Meltzer as to why I do not advocate the combination of the intraspinal and the intravenous methods, I have distinct experience of the far more dangerous character of the intraspinal medication. I have seen immediate paralyses ensue, and cases in which rectal and vesical control have become markedly impaired. With the use of the intravenous treatment I have kept a patient over ten years in a very comfortable condition.

Relation of the Chemical Structure of Opium Alkaloids to Their Action on Smooth Muscle and on the Pharmacologic and Therapeutic Properties of Some Benzyl Esters

Dr. D. I. Macht, Baltimore: I have made an intensive study of the alkaloids of opium in connection with morphin. A marked difference exists in the alkaloids of the two products. The alkaloids of opium act on the central nervous system, on peripheral structures, and on smooth muscle. The effect of morphin is increased tonicity, that of papaverin, relaxed tonicity and inhibition of contractions. Thus the latter preparations (papaverin alkaloids) can be used for expulsion of renal calculi, by relaxation of the ureteral muscle. Search was made for nontoxic products, and benzyl benzoate and benzyl acetate, very slightly toxic products, were found, giving the effects of papaverin. Metabolic studies showed that benzyl acetate was excreted by the kidneys as hippuric acid. This is nontoxic and can be administered by mouth. It has been tried clinically, but the disagreeable odor and digestive disturbance after its use contraindicate its use. Benzyl benzoate was then tried. It was found to be of use in cases of excessive peristalsis, in diarrhea and in dysentery. A 20 per cent. solution in alcohol was used. Other indications are in pylorospasm, intestinal colic, spastic constipation, biliary colic, ureteral calculi, vesical spasm, spasm of seminal vesicles, uterine colic, arterial spasm, high blood pressure and lastly bronchial spasm with true asthma, in which remarkable relief was afforded. Benefit occurs by relaxation of spasm.

Use of Benzyl Alcohol as a Local Anesthetic

Dr. D. I. Macht, Baltimore: In testing the taste of the drug, it was found that a drop on the tongue produced numbness, and experiments proved that this agent produced anesthesia of the sensory nerve endings. Benzyl alcohol possesses only slight toxicity. It is found in balsam of Peru and Tolu and is known as phenmethyl-O. The boiling point is very high. It is soluble up to 14 per cent. in water, at room temperature. All the solutions used in the clinic were from 0.5 to 4 per cent. Other effects are sensory nerve paralysis; corneal anesthesia; blocking of nerve fibers, first sensory, then motor; effect on blood pressure (the heart not being affected at all), and a slight sedative effect on the central nervous system. The toxicity as compared with cocain shows that 20 c.c. injected into an animal gives no effect, whereas 20 mg. of cocain injected kills an animal. It has been tried out in the clinic with marked success. The anesthesia was found to be fully that of cocain. A bullet was extracted without pain; ingrowing toenails were excised; complete excision of hemorrhoids and excision of rectal fissure were painlessly performed.

DISCUSSION

Dr. S. J. Meltzer, New York: Has Dr. Macht studied only smooth muscle or has he also experimented with papaverin on striated muscle? What are the effects on the central nervous system? Does the papaverin group increase the inhibitory side of the nerve effect, or are the phenomena of the opposite nerves reduced?

Dr. T. R. Brown, Baltimore: In cases of increased irritability of the gastro-intestinal tract, associated with diarrhea and mucous colitis, the symptoms are very greatly relieved by the benzyl esters.

Dr. S. Solis Cohen, Philadelphia: I have found benzyl benzoate of value in the treatment of various forms of asthma with dyspnea and in arteriosclerosis with excessively high blood pressure. It is of great use in a particularly irritating cough, known in Philadelphia as "Hog Island Whoop." In cases in which one does not care to use morphin, benzyl benzoate is a distinct palliative.

Dr. Alfred H. Hess, New York: I have used papaverin in pylorospasm with good result.

Dr. D. I. Macht, Baltimore: I believe that the papaverin group exerts its action peripherally. This is the therapeutic action of all papaveraceae. Benzyl esters act on the central nervous system. The peripheral effect on smooth muscle predominates, however. In regard to the toxicity of the benzyl esters, the herbivorous animals apparently can stand much larger doses and can metabolize them better than carnivorous animals.

Acute Pancreatitis in Typhoid

Dr. Thomas McCrae, Philadelphia: The case ran an ordinary course, the temperature being normal on the twenty-fourth day. On the twenty-sixth day the patient complained of pain in the upper right quadrant, there was jaundice, and the leukocytes numbered 20,000. Two or three days later the pain subsided and the leukocytes numbered 10,000. Eleven days later there was a definite mass in the region of the gallbladder, somewhat tender, and a diagnosis of cholecystitis was made. The next day the pain was very severe and bloody stools were passed, blood was present in the urine, and large amounts of blood were vomited. The leukocytes numbered 26,000. The symptoms subsided for a time when the pain again increased. On the fifty-fourth day of the illness an operation was performed. It was found that the gallbladder, duodenum, stomach and bile ducts were normal. The pancreas was swollen and inflamed. The abdomen was closed and the patient made a good recovery, and in three weeks the mass disappeared. On the eighty-second day he was discharged perfectly well. Points to be observed in this case were that there was very little fever, never complete stoppage of bile, and the stools showed no evidence of pancreatic disease.

DISCUSSION

Dr. Emanuel Libman, New York: I have seen this picture in cases in which I suspected a mild form of pancreatitis. A certain form of pancreatitis occurs in acute infectious diseases and in suppurative conditions after abdominal operations. The diagnosis of acute pancreatitis is not so difficult as it is supposed to be. In these cases there is tenderness of the left lumbar region, marked even in patients not sensitive to pain. This question of the relative sensitiveness of the patient to pain is important. Pain is much more apparent in some patients than in others. In acute pancreatitis the pain on the left side can always be elicited, and this is found in no other condition.

Dr. Thomas McCrae, Philadelphia: There was no tenderness in the left lumbar region in this case. A careful examination was made because when the hematuria appeared it was thought that there was a condition in the kidney producing this symptom.

Clinical Manifestations of Tropical Sprue

Dr. E. J. Wood, Wilmington, N. C.: There has been a great increase in the number of cases in North Carolina, South Carolina and Georgia. I have seen cases of tropical sprue from the East and from Porto Rico, as well as Southern cases. There is only one type in all cases. Sprue is often confused with pallagra. It is no doubt true that many cases of pellagra are complicated by sprue. Sprue needs special attention at this time because it has appeared near many of the Southern cantonments. The symptoms appeared first in the tongue, in the form of small, painful erosions. In the diarrhea of sprue the feces are tremendously acid in reaction, are yeasty, and are passed during the early morning hours. They show tremendous loss of fat, as much as 59 per cent. The nitrogen loss is 15 per cent. Functional deficiency of the pancreas is evident in most cases, but not all. Anemia in sprue is an essential feature. The absence of anemia in pellagra is a distinguishing feature. In sprue the anemia appears similar to pernicious anemia. Shrinkage of the liver is seen in both conditions. The stomach content changes are fairly similar in both diseases and show a decrease in hydrochloric acid. The beef treatment of Cantley has been found the best means of therapeusis.

DISCUSSION

Col. William H. Welch, M. R. C., Baltimore: I have found buccal lesions and gastro-intestinal lesions which might be referable to sprue. I should like to know to what extent pellagra is complicated by sprue. Goldberger's work would seem to show that this is one of the most difficult and perplexing questions. Not a single case of pellagra has been found to develop when the diet has been properly supplemented.

Dr. Alexander McPhedran, Toronto: A few years ago I saw a woman who returned from India much affected. Her condition was grave, with extreme anemia, but there was no material loss of weight. Diarrhea was marked. The tongue had a rather glazed, smooth appearance. She had recurrent attacks of vesicular stomatitis. No treatment produced any effect until she tried the strawberry diet, three or four pounds a day, and she improved on that and for two summers was greatly improved. Two years later she became pregnant and had a marked mitral stenosis. It was believed best to do cesarean section three weeks before term. The child was viable. She did well for a few days, but then developed sepsis and died.

Dr. S. Solis Cohen, Philadelphia: A teacher returned from Porto Rico with an undoubted case of sprue. She showed marked nervous and mental symptoms. British writers advocated treatment by old santonin. This patient received this treatment and recovery followed. Is that the general experience?

Dr. T. R. Brown, Baltimore: I have seen two cases from Porto Rico. The stomach contents showed complete achylia. Under treatment the stomach contents returned to normal as regards hydrochloric acid.

Dr. E. J. Wood, Wilmington, N. C.: The point to decide is, When does sprue begin to complicate pellagra? The pellagra tongue has a different appearance, being a much deeper red, this being accompanied with profuse and painful salivation. In sprue the tongue is furred and dry because of the absence of salivation. The intake and the output of nitrogen in pellagra are normal. Pellagra is a seasonal disease running from May to August. In sprue the diarrhea, instead of ending, continues. Anemia is not associated with pellagra, but in sprue it is essential for diagnosis. In answer to Dr. Libman, there is an absolute absence of hydrochloric acid in sprue. In regard to the nervous disturbances mentioned by Dr. Cohen, these disturbances are marked in pellagra and perhaps the case mentioned was really pellagra and not sprue. The strawberry diet has not been found to be of any service. Santonin and emetin have been discarded as worthless. No treatment except dietetic control and rest for a prolonged period has been found of any avail.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

May, 1918, 155, No. 5

1 *Surgical Shock and Some Related Problems. J. E. Sweet, Philadelphia.—p. 625.
2 Melanosarcoma of Rectum; Report of Case. J. W. Churchman, New Haven, Conn.—p. 639.
3 *Prognosis of Gallbladder Infections. J. H. Gibbon, Philadelphia.—p. 644.
4 Nervous Manifestations of Syphilis of Eye. J. Collins, New York.—p. 649.
5 *Cardiac Syphilis. W. C. Moore, Washington, D. C.—p. 660.
6 Sulphoconjugation as Test of Liver Function. M. Kahn, New York.—p. 668.
7 Some Clinical and Experimental Observations on Gastric Acidity: Use of Gas Chain Method. G. L. McWhorter, Chicago.—p. 672.
8 Prognostic Value of Psychometric Tests as Compared with Clinical Signs in Epilepsy. L. P. Clark and A. Mileau, New York.—p. 685.
9 Gummous Syphilis of Thyroid. F. E. Senear, Ann Arbor, Mich.—p. 691.
10 Differential Diagnosis of Affections of Right Upper Quadrant. C. G. Heyd, New York.—p. 703.
11 Roentgen Rays as Aid in Diagnosis of Ulcus Ventriculi. I. W. Held and M. H. Gross, New York.—p. 713.

1. **Surgical Shock and Some Related Problems.**—Sweet defines shock as a condition marked by a gradual progressive fall of blood pressure with no obvious cause, such as hemorrhage, intracranial pressure or heart failure. He believes that it is due to a paresis or paralysis of the musculature of the arterioles. The only way in which Sweet has been able to experimentally produce anything which looks like shock to him is by the removal of the suprarenals. After the removal of the suprarenals the content of the intestinal tract contains a poison identical with, or at least similar to, the poison found in high obstruction, which suggests a possible relation between high obstruction and the suprarenals. Speaking of blood transfusion Sweet says: Let us think for a moment of what the blood is and does and let us begin by getting out of our heads the idea that the blood is that vital life-giving fluid which can be cleaned by a spring tonic or which can become diseased with any result, from pimples on the face to cancer of the uterus. The blood is just about as vital as a bucket of water and just as full of life. It contains and carries to the tissues just what and only what the tissues put into it. It is a purely passive, inert, lifeless stream, carrying canal boats loaded with goods, the red cells, themselves again passive. The red cells are alive, but only mildly so, and no more so than certain chemical agents, sponge platinum for example. The white cells are alive in a more real sense, but they are not in the blood stream because the blood stream wants them; they were merely playing on the bank and fell in. Sweet says he has the highest respect for it as a common carrier, no respect at all for it as an active agent, endowed with a free will; and because he feels as he does toward the blood, he fails to see that a transfusion can ever be much more than a symptomatic treatment.

3. **Prognosis of Gallbladder Infections.**—Gibbon believes that the mortality in gallbladder infections depends very largely on whether or not a cholangeitis is present, and that a persistent jaundice accompanied by general symptoms of sepsis is of grave import and calls for prompt drainage through the gallbladder or common duct, or both; that a patient having undoubted symptoms of gallbladder infection should not be allowed to postpone operation until an acute exacerbation of the infection occurs; that even far-advanced and neglected cases of infection of the gallbladder alone give good results following operation; that jaundice due to stone in the common duct in the absence of symptoms of sepsis is not necessarily a grave symptom if prompt operation is done; that the high mortality following operations occurs in the cases of long-standing gallbladder symptoms with acute exacerbation of the infection and in cases of malignancy of the gallbladder and pancreas; that the use of horse serum has practically eliminated the danger of hemorrhage due to long-standing jaundice, and that the recurrence of gallstones after thorough operation is extremely rare.

5. **Cardiac Syphilis.**—Moore insists that cardiac complications during syphilis occur much more frequently than has been recognized generally heretofore. The cardiac lesions occur earlier in the disease than has been thought, even in the early secondary stage. Congenital syphilis of the heart is a cause of sudden death in early life, this condition being unsuspected clinically, as a rule. The nature of the process in the heart is distinct and may be recognized microscopically, and the spirochetes may be found in the lesion; it is most frequently a myocarditis. Uncomplicated aortic insufficiency is of syphilitic origin in the majority of instances. The symptoms are not definite but extremely suggestive; the diagnosis depends mainly on the signs of some cardiac disorder, with a positive Wassermann, and a response to antisyphilitic treatment. The prognosis is good in the early stages and varies directly with the stage of the disease and the extent of the changes produced. Treatment should be mainly antisyphilitic intensive. Cardiac treatment is required rarely except in cases with decompensation. Once instituted treatment should be carried through persistently and unteruptedly.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

May, 1918, 77, No. 5

12 Anatomic Factors Concerned in Production of Deformed Pelves. J. W. Williams, Baltimore.—p. 714.
13 *New Operation for Prolapse of Uterus. E. Ries, Chicago.—p. 758.
14 Development and Perfection of "Interposition Operation" for Prolapse of Uterus and Bladder. I. S. Stone, Washington, D. C.—p. 773.
15 Case Illustrating Value of Kidney Drainage with Ureteral Catheter, of Pelvic Lavage and Intra-Ureteral Manipulation. H. G. Bugbee, New York.—p. 781.
16 Delivery by Abdominal Section. E. P. Davis, Philadelphia.—p. 786.
17 Painless Childbirth. W. F. B. Wakefield, San Francisco.—p. 792.
18 *Analysis of Blood in Eclampsia and Allied Intoxications. J. M. Slemons, New Haven, Conn.—p. 797.
19 Surgical Conditions Complicating Intra-Uterine Pregnancy. R. D. Mussey, Rochester, Minn.—p. 806.
20 Acidosis in Pregnancy (with Special Reference to Carbon Dioxid Method of Van Slyke). L. A. Emge, San Francisco.—p. 813.
21 Gallbladder Disease Complicating Pregnancy. A. W. White, Brooklyn.—p. 821.

13. **Operation for Prolapse of Uterus.**—All or any of the steps of Ries' operation are used according to the findings. Assuming a case of a multipara who does not insist on further offspring, the vagina is disinfected with compound solution of cresol, and the external skin with iodin or acetone alcohol. The bladder is catheterized. The cervix is pulled down, is disinfected, and volsella are placed just below the external meatus, one far out on each side of the vagina. A piece of vagina the size of which depends on the amount of redundant vaginal tissue is dissected off. The edges of the vagina are then lifted up and dissected farther away from the bladder so that the lateral attachments of the bladder are freed. Then the ligamenta pubovesicalia, where distinct, are separated from the bladder a short distance and the bladder is pushed away from the uterus clear up to the peritoneum, but the peritoneum is not opened. Now the first sutures unite the ligamenta pubovesicalia below the bladder where they are well pronounced. The next line of continuous sutures grasps the vaginal wall and where the urethra is not firmly fixed, the urethra. At the end of the urethra this suture is tied. From there on a continuous suture unites vaginal wall and fastens it at the same time to the cervix so that a deep anterior fornix of the vagina is created. Coming close to the lower end of the cervix the line of incision is drawn into a transverse line and the suture made across the cervix. This finishes the work on cervix, urethra and anterior vaginal wall. The bladder has not been sutured so far at all and it lies temporarily above the anterior fornix of the vagina and any oozing from it will accumulate in this space between the peritoneum above and the vagina below.

The operation for the rectocele is now begun with a Hegar triangular denudation, the rectum is separated from the vagina so far as necessary and by blunt dissection of the levator muscle is laid bare on both sides. The attachment of the pubococcygeus behind the anus causes the posterior circumference of the anus to move if the freed levator is pulled on. Three or four sutures unite the edges of the levator. Then a point as much below the apex of the triangle as necessary in each case is pulled up and a suture made which distorts the upper end of the triangle into a two-pronged suture line, the two prongs lying in the posterior sulci of the vagina. The rest of the perineal plastic is done in the usual way. Skin sutures are made with celluloid linen, everything else with plain catgut. The perineum is covered with pertrolatum as the only dressing. The abdomen is entered and the uterus exposed. Sterilization Ries accomplished by excising the tube out of the uterine horn in wedge shape. The gap in the uterine horn is sutured over by a special suture or this suture is done together with the next step of the operation.

The edge of the peritoneum of the bladder is pulled as high up on the uterus as the tissue will allow, thereby taking the slack out of the posterior vesical wall and fastening the posterior bladder wall high up on the uterus. This peritoneum and bladder is sutured to the fundus of the uterus and the stitches which fasten it can be utilized to close the gap in the uterine horn if this has not been done previously. If the symphysis has been found bare, the anterior wall of the bladder is pulled up and stitched to the posterior aspect of the rectus muscles as high as the slack permits. Next the parietal peritoneum is sutured to the posterior surface of the uterus below the fundus so that the fundus is extruded from the peritoneal cavity, and the suture of the parietal peritoneum is completed. The rectus muscles or sometimes the fascia are sutured to the extruded fundus. The muscles and fascia are then united in the ordinary way and the skin sutured.

18. **Blood in Eclampsia.**—Analysis of the blood in cases of eclampsia and allied intoxications revealed a normal quantity of amino acids and a slight retention of nitrogenous waste products, as urea and uric acid. After convulsions there is an increase in the blood sugar. The total fat is approximately the same in cases of toxemia and of normal pregnancy. Usually the cholesterol is increased and the lecithin diminished in eclampsia. The carbon dioxid combining power of the plasma is reduced during normal pregnancy, indicating a mild acidosis, and the variations met with in the presence of autointoxications are insignificant. Slemons says that the results of blood analysis do not support the acidosis hypothesis nor the derangement of protein metabolism hypothesis of eclampsia and indicate that the cause of the disease must be sought elsewhere.

American Journal of Ophthalmology, Chicago

May, 1918, **1**, No. 5

22 Leprosy; Ophthalmologic Findings. A. M. Yudkin, New Haven, Conn.—p. 303.
23 Case of Traumatic Pulsating Exophthalmos. A. J. Bedell, Albany, N. Y.—p. 311.
24 Star Shaped Figure in Macula of Syphilitic Origin. H. C. Haden, Galveston, Texas.—p. 313.
25 Pathogenic B. Subtilis Isolated from Eye. E. A. Greenspon, Montreal, Canada.—p. 316.
26 Ophthalmic Examination of Drafted Men at Camp Jackson. B. Chance, Philadelphia.—p. 318.
27 Wassermann Findings in Ophthalmic Disease. N. M. Brinkerhoff, Philadelphia.—p. 322.
28 Association of Ocular and Nasal Accessory Sinus Disease. G. O. Ring, Philadelphia.—p. 324.
29 Two Cases of Atrophy of Iris. F. Allport and J. R. Smith, Chicago.—p. 336.
30 Blepharospasm Secondary to Pyorrhea Alveolaris. H. M. Thompson, Pueblo, Colo.—p. 338.
31 Hysteric Amblyopia. F. A. Morrison, Indianapolis.—p. 338.
32 Corneal Loupe. R. Von der Heydt, Chicago.—p. 339.

Boston Medical and Surgical Journal

May 16, 1918, **178**, No. 20

33 Traumatic Shock. W. T. Porter, Boston.—p. 657.
34 Anatomy and Physiology of Respiratory Tract. F. F. D. Reckord, Harrisburg, Pa.—p. 660.
35 Portable Respiration Apparatus for Clinical Use. F. G. Benedict, Boston.—p. 667.

Canadian Medical Association Journal, Toronto

May, 1918, **8**, No. 5

36 Pancreatic Cysts; Report of Cases. W. F. Hamilton, Montreal. —p. 385.
37 Cholecystectomy—Useful Technic. F. N. G. Starr and R. Graham, Toronto.—p. 391.
38 Handling and After-History of Heart Affections in Soldiers. J. C. Meakins.—p. 394.
39 Diagnosis of Disseminated Sclerosis. A. G. Morphy, Montreal. —p. 401.
40 Tuberculin, Its Nature and Action. R. C. Paterson, Saranac Lake, N. Y.—p. 409.
41 Cutaneous Manifestations of Syphilis. A. V. Greaves.—p. 417.
42 Teaching of Hygiene. A. H. Mackay.—p. 424.
43 *Ruptured Ectopic Pregnancy—Blood Transfusion and Pulmonary Embolism. R. V. B. Shier, Cookstown, Ont.—p. 427.

43. **Ruptured Ectopic Pregnancy—Blood Transfusion and Pulmonary Embolism.**—When first seen six hours after onset of symptoms Shier's patient presented the signs of abdominal hemorrhage. The history and patient's condition quickly led to a diagnosis of ruptured ectopic pregnancy. She was pulseless, her pupils dilated and altogether not at all encouraging. The abdomen was opened and found full of blood and clots. The ruptured tube was easily located, its pedicle clamped and tied off. Pituitary extract 1 c.c. was given. The abdomen was made reasonably free of blood and clots and the incision closed, drainage being provided by two rubber tubes passing down to the pelvis. The patient was returned to bed with the foot elevated. About two hours later, Shier transfused her from her husband, a healthy robust man. About 750 c.c. of blood was used. The sodium citrate method was followed. The usual signs of improvement after transfusion followed, and from then on the patient made an uninterrupted recovery until the morning of the twelfth day, when suddenly, while in conversation with the nurse, she was seized with a fainting spell and gasped for air. Collapse followed immediately, the pulse dropped to 70 and was very weak. She was cyanotic and suffering from dyspnea. She had no pain but her pulse was now 140. Shier suspected pulmonary embolism and gave stimulants and fresh air in abundance. In a few hours time the cyanosis lessened, but the pulse remained fast and the dyspnea increased. The respiratory rate reached 58 to 60 at times. The air hunger was extreme. Her condition remained much the same for thirty-two hours when death came through gradual cardiac failure.

Illinois Medical Journal, Chicago

May, 1918, **33**, No. 5

44 Reclamation of Wounded Soldier. H. N. MacKechnie, Chicago. —p. 245.
45 New Field Development of Use of Army Litter. E. D. Wise, Fort Oglethorpe, Ga.—p. 248.
46 Case of True Senile Prostate Associated with Multiple Sacculi of Bladder. G. F. Lydston, Chicago.—p. 250.
47 Treatment of Venereal Diseases Recommended for Army. W. A. Pusey, Chicago.—p. 251.
48 Mental Depression. C. F. Read, Chicago.—p. 253.
49 Ophthalmologic Cases. C. Loeb, Chicago.—p. 257.
50 Relation of Glands of Internal Secretion to Surgery. J. B. Haeberlin, Chicago.—p. 262.
51 Triple Wounds of Stomach from Single Intact Bullet. N. Kerr, Chicago.—p. 267.
52 Range of Physiologic Life of Tonsil. J. W. Smith, Bloomington. —p. 268.
53 Why Are Tonsils and Lymphatics of Nose and Throat Responsible for so Many Systemic Diseases? R. H. Good, Chicago.—p. 271.

Iowa State Medical Society Journal, Des Moines

May, 1918, **8**, No. 5

54 Problems of Stream Pollution in Iowa. L. Higgins, Des Moines. —p. 163.
55 Pathology of Pregnancy. P. Reed, Iowa City.—p. 168.
56 Indications and Use of Drugs in Obstetrics. H. W. Vinson, Ottumwa.—p. 171.
57 Obstetric Accidents as Cause of Gynecologic Conditions. W. C. Kasten, Fort Madison.—p. 175.
58 Management of Premature Labor and Obstetric Surgery Outside of Hospitals. C. W. Stephenson, Milton.—p. 177.
59 Embolism of Superior Mesenteric Artery; Report of Case. F. R. Sparks, Waverly.—p. 182.
60 Some Troublesome Fractures. W. H. Fox, Waucoma.—p. 186.

Kansas Medical Society Journal, Topeka

May, 1918, **18**, No. 5

61 Some Lessons of War. C. S. Huffman, Topeka.—p. 107.
62 Obstetric Clinic, Kansas City General Hospital. G. C. Mosher, Kansas City.—p. 110.

Journal of Experimental Medicine, Baltimore

May, 1918, **27**, No. 5

63 Study of Low Blood Pressures Associated with Anaphylactic and Peptone Shock and Experimental Fat Embolism, with Special Reference to Surgical Shock. J. P. Simonds, Chicago.—p. 539.
64 *Autohemagglutination Experimentally Induced by Repeated Withdrawal of Blood. O. H. Robertson and P. Rous, New York.—p. 563.
65 *Experiments Outlining Limitations of Operations on Abdominal Aorta. C. Goodman, New York.—p. 569.
66 Morphologic Characteristics and Nomenclature of Leptospira (Spirocheta) Icterohemorrhagiae (Inada and Ido). H. Noguchi, New York.—p. 575.
67 *Cultural Conditions of Leptospira (Spirochaeta) Icterohemorrhagiae. H. Noguchi, New York.—p. 593.
68 *Survival of Leptospira (Spirocheta) Icterohemorrhagiae in Nature. H. Noguchi, New York.—p. 609.
69 *Behavior of Hypochlorite and of Chloramin-T Solutions in Contact with Necrotic and Normal Tissues in Vivo. J. H. Austin and H. D. Taylor, New York.—p. 627.
70 *Toxicity of Certain Widely Used Antiseptics. H. D. Taylor and J. H. Austin, New York.—p. 635.

64. **Autohemagglutination Induced by Repeated Withdrawal of Blood.**—The influence of repeated bleedings on the normal isohemagglutinins was investigated by Robertson and Rous. They found that the repeated withdrawal of moderate quantities of blood does not lead to a development of new isoagglutinins in rabbits, or to noteworthy changes in normal ones already present. On the other hand, clumping of the animals' own cell in specimens of the whole blood is a frequent result. It is found in animals rendered anemic by the bleedings, not in those that rapidly repair their losses and remain in good condition. A similar clumping is sometimes to be seen in the blood of rabbits rendered anemic by malnutrition. The clumping is due to a true auto-agglutinin, which differs from the normal auto-agglutinin in its far greater strength, as also, at least in some instances, by a peculiar variation in its activity with changes of temperature. In the rabbits which developed iso-agglutinins after bleeding, the tendency of the cells to form rouleau was far less than the normal. It follows that rouleau formation is not essentially connected with auto-agglutination, as has been assumed in the past. The authors suggest that in the light of these findings a systematic search for autohemagglutinins in the blood of anemic patients would seem of interest.

65. **Operations on Abdominal Aorta.**—From the results of the five experiments presented by Goodman there seems to be no difficulty in correcting injuries of the abdominal aorta in dogs, with subsequent perfect restoration of the continuity of the vessel. The complete occlusion of the aorta for a period of thirty minutes is not necessarily followed by serious consequences. For lateral defects in the aorta, or for injuries not involving the entire circumference, a rectangular clamp may be applied for a prolonged period in order that the circulation should not be completely cut off. An operative field free from blood can thus be obtained while the circulation is maintained through the remaining lumen of the aorta. In the instances in which a portion of the aorta must be resected, an arterial segment taken from another animal can be safely utilized as a transplant. Smaller vessels can be adapted to the caliber of the aorta by the following procedure which was devised by Jeger and Helmuth Hosef. While the reestablishment of the continuity of the severed aorta by the circular suture is possible, the approximation of the severed ends during the suture entails such injury that thrombosis frequently occurs. Therefore, when the aorta is completely severed, the introduction of a transplanted segment is indicated. An arterial tube of increased caliber made of smaller vessels such as the carotid lends itself readily as a transplant to the severed aorta, with a reasonable assurance of reestablishing the continuity of this vessel. Defects in the aorta can be readily corrected by the use of fascial transplants with minimum danger of thrombosis.

67. **Cultural Conditions of Leptospira Icterohemorrhagiae.**—Noguchi claims that the presence of suitable animal or human serum is essential for the cultivation of *Leptospira icterohemorrhagiae*. A luxuriant growth takes place in a medium of Ringer's solution to which more than 10 per cent. of normal rabbit serum is added. The use of an undiluted serum offers no advantage over a diluted one, provided the latter contains at least 10 per cent. of serum. In the case of certain animal serums dilution seems to make them more suitable for cultivation purposes, owing perhaps to its reduction of their inherent alkalinity. The reaction of the medium is an important factor in the cultivation of the organism, which thrives most vigorously in a medium of which the reaction is slightly alkaline, not exceeding that of the serum. Three different media are described by Noguchi for the cultivation of freshly isolated strains. After prolonged cultivation on these mediums a strain may be readily cultivated in a serum diluted with Ringer's or isotonic salt solution.

68. **Survival of Leptospira Icterohemorrhagiae in Nature.**—The larvae and adults of the Culex mosquito, the larvae of the house fly and bluebottle fly, wood ticks (*Dermacentor andersoni*), and leeches failed to become carriers of the spirochetes when fed on infected guinea-pigs or their organs; they cannot play the part of an intermediary host of *Leptospira icterohemorrhagiae*.

69. **Hypochlorite and Chloramin-T Solution.**—Exact determinations of the rapidity of the fall in chlorin concentration on pathologic and on normal skin, under experimental conditions were made by Austin and Taylor because they might be of value to surgeons using Dakin's hypochlorite and chloramin-T solutions clinically. The left ears of three white rabbits of the same relative size and weight were exposed to the rays emitted by a Coolidge tube. The spark gap used measured 3 inches; the milliamperage was 110; the distance from the target to the ear was 6 inches; and the time of exposure was twenty minutes. Eight weeks later the roentgen rayed ears each exhibited a sharply demarcated gangrenous area over which there was considerable crusting of epithelium and secretions and in the lumen there was much thick pus. The ears of the affected rabbits were each suspended for twenty minutes in a beaker containing 400 c.c. of the solution to be tested.

The fall in chlorin concentration of Dakin's hypochlorite solution was more rapid in contact with necrotic than in contact with normal tissue. The fall in chlorin concentration of chloramin-T solution was very slight when applied to necrotic tissue and is negligible when applied to normal tissue. The action of the hypochlorite solution on tissue resulted in the separation of particles of necrotic tissue, hair, epithelial scales, coagulated serum, etc., and a gradual digestion of these substances, taking place over a period of at least seventeen hours. The fall in the chlorin concentration of hypochlorite solution was not complete until the particles were completely dissolved. Chloramin-T solution, 2 per cent., had no erosive effect comparable with that exhibited by the hypochlorite solution. Repeated exposure to the three solutions showed that the hypochlorite solution was superior in its cleansing ability on necrotic tissue. The hypochlorite solution was much more irritating to normal rabbit skin than chloramin-T solution or the alkaline control solution. Therefore, the authors conclude that irritating effects must be due to the readily available chlorin.

70. **Toxicity of Certain Antiseptics.**—The toxic action of a number of antiseptic substances in common use was investigated by Taylor and Austin. The method was to inject increasing doses into mice intraperitoneally and into guinea-pigs both subcutaneously and intraperitoneally. The only antiseptic of which the smallest fatal dose was smaller than the largest survival dose was dichloramin-T. Since two mice survived 4.7 mg. per 100 gm. of body weight, it is probable that 15.5 mg. rather than 1.6 mg. is to be considered the smallest fatal dose for this series. Of all the substances tested, eucalyptol and brilliant green were the most toxic, the lethal dose of each being 0.1 mg. per 100 mg. of body weight. Mercurophen, mercuric chlorid, and chloramin-T constitute the group with the next highest toxicity, the lethal dose being 1 mg. per 100 gm. of body weight. Dichloramin-T, proflavine and the four hypochlorite solutions tested follow in the order named with a lethal dose of about 10 to 15 mg. per 100 gm. of body weight. The least toxic chemicals are iodin and phenol, of which the lethal doses are about 50 mg. per 100 gm. of body weight. The lethal dose of the Dakin's hypochlorite solution injected under the skin of the

abdomen of guinea-pigs per 100 gm. of body weight is the same as that determined intraperitoneally in the mouse. Chloramin-T and dichloramin-T administered in this manner gave rise to local necrosis with extensive sloughing. Therefore, the substances injected intraperitoneally into mice and guinea-pigs arranged in the order of their decreasing toxicity are: eucalyptol and brilliant green; mercurophen; mercuric chlorid and chloramin-T; dichloramin-T and proflavine; hypochlorite, Dakin's hypochlorite, Javelle water, and magnesium hypochlorite, iodin and phenol. Now that Dakin's bland solvent, chlorcosane, is available as a vehicle for dichloramin-T, the authors advise that eucalyptol should be discarded for this purpose because of its much greater toxicity.

Medical Record, New York

May 18, 1918, **93**, No. 20

71 Probing the Mind. J. V. Haberman, New York.—p. 839.
72 Mastoiditis. W. H. Huntington, Washington, D. C.—p. 849.
73 Treatment of Malaria. B. Robinson, New York.—p. 852.
74 Opportunities for Preventive Medical Work in Dispensary Clinic. A. M. Richardson, New York.—p. 853.
75 Roentgen Diagnosis of Disease of Stomach. W. H. Meyer, New York.—p. 857.

New York Medical Journal

May 18, 1918, **107**, No. 20

76 *Electro-Operative Bone Clamp. F. H. Albee, New York.—p. 913.
77 Study of Images Reflected from Cornea, Iris, Lens and Sclera. W. H. Bates, New York.—p. 916.
78 Smith-Indian Intra-Ocular Operation for Cataract. F. Allport, Chicago.—p. 924.
79 Organism Causing Poliomyelitis and How Disease Probably Spreads. H. Greeley, Brooklyn.—p. 925.
80 Relation of Industrial Hygiene to General Practice. L. I. Harris, New York.—p. 928.
81 Encourage Obscure Contributor. J. van Becelaere, Detroit.—p. 931.
82 Gallstones. S. Weiss, New York.—p. 932. To be continued.
83 Treatment of Gunshot Injuries of Spinal Cord at Casualty Clearing Stations. H. M. W. Gray, Aberdeen, Scotland.—p. 937.
84 Epidemic of Sore Throat at Fort Ethan Allen, Vt. I. W. Brewer.—p. 938.

76. **Electro-Operative Bone Clamp.**—Albee has devised an electrically driven bone clamp for use in difficult cases, in conjunction with the traction table, although it has been found that the clamp can be successfully used alone and is a most powerful instrument per se. In several instances of malunited fracture of the femur of several months' duration and with two thirds inches of shortening (overriding), the fragments have been easily and quickly distracted and brought into alinement with little muscular exertion on the part of the operator for the reason that all the energy has been expended on the bone fragments themselves.

Northwest Medicine, Seattle

May, 1918, **17**, No. 5

85 Organic Basis of Neurasthenia and Surgical Cure. H. W. Riggs, Vancouver, B. C.—p. 131.
86 Operative Treatment of Fractures. C. D. Hunter, Tacoma.—p. 134.
87 Bone Transplants. M. G. Sturgis, Seattle.—p. 137.
88 Perforated Ulcer of Stomach and Duodenum. A. O. Loe, Seattle.—p. 140.
89 Postoperative Gaps in Abdominal Wall. R. C. Boyle, Vancouver, B. C.—p. 142.
90 Paralytic Ileus in Gunshot Wounds of Abdomen. R. D. Forbes, Seattle.—p. 144.
91 Intestinal Obstruction. A. S. Monro, Vancouver, B. C.—p. 147.
92 Importance of Early Diagnosis of Intestinal Obstruction. W. B. Holden, Portland, Ore.—p. 148.

Public Health Journal, Toronto

May, 1918, **9**, No. 5

93 Tables for Rapid Interpretation of Fermentation Tube Results. M. H. McCrady.—p. 201.
94 Tuberculosis and Maternity. D. A. Stewart, Ninette, Man.—p. 221.

Southwestern Medicine, El Paso, Texas

May, 1918, **2**, No. 5

95 Our Brothers in Khaki. W. A. Holt, Globe, Ariz.—p. 1.
96 Diagnosis and Treatment of Skin Lesions by General Practitioner. V. V. Wood, St. Louis.—p. 5.
97 Case of External Hydrocephalus Following Injury. E. B. Rogers, El Paso.—p. 19.
98 Prevention of Disease in War. L. L. Seamon.—p. 22.
99 Case of Kidney Stone. E. B. Rogers, El Paso.—p. 29.

Tennessee State Medical Association Journal, Nashville

May, 1918, **11**, No. 1

100 Duty of Profession in Present Crisis. E. T. Newell, Chattanooga.—p. 1.

Vermont Medicine, Rutland

April, 1918, **3**, No. 4

101 Anemia. C. W. Howard, Shoreham.—p. 79.
102 Symptomatology in Child. C. K. Johnson, Burlington.—p. 83.

Wisconsin Medical Journal, Milwaukee

May, 1918, **16**, No. 12

103 Social Medicine in Industries. C. H. Lemon, Milwaukee.—p. 453.
104 Health Insurance. A. W. Gray, Milwaukee.—p. 459.
105 Present Status of Tonsil Removal. H. B. Hitz, Milwaukee.—p. 463.
106 Plea for Conservation of Fingers. E. W. Macchtle, West Allis.—p. 465.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

April 20, 1918, **1**, No. 2990

1 *Vaginal Douching. W. E. Fothergill.—p. 445.
2 Treatment of Furunculosis and Other Deep Seated Coccogenic Infections by Collosol Manganese. M. Morris.—p. 446.
3 *Recovering Dysentery Bacilli from Stools According to Time Elapsing Since Onset of Disease. C. J. Martin and F. E. Williams.—p. 447.
4 *Two Fatal Cases of Icterus Gravis Following Injections of Novarsenobillon. P. C. Fenwick, G. B. Sweet and E. C. Lowe.—p. 448.
5 *Toxic Jaundice, with Atrophy of Liver, Followed by Regeneration and Recovery. B. G. R. Crawford.—p. 450.
6 Acute Metatarsal Overstrain (Foot Swelling). A. R. Jones.—p. 451.
7 *Amyl Nitrite Inhalations in Diagnosis of Mitral Stenosis. R. A. Morison.—p. 452.
8 Pylon, or Temporary Artificial Leg. W. H. Broad.—p. 453.

1. **Vaginal Douching.**—Fothergill says the vaginal douche can has, on the whole, been a curse to womankind rather than a blessing. Just as there was a pessary age, characterized by the haphazard use of pessaries in the treatment of the minor ailments of women, so there has been a long period of indiscriminate douching which has not yet reached its belated end. For a time douching remained under the control of the medical profession; but then the general public began buying douche cans on its own account, and the pernicious but apparently seductive habit of antiseptic douching is now generally begun on the advice of an elderly relative. Every patient who complains of minor pelvic ailments should be asked whether she douches or not; and, if she says "Yes," should be told to stop it. The vaginal surface has no glands, and is not a mucous membrane, but is covered by stratified squamous epithelium, which, though very strong and resistant to infection, is, so to speak, not quite waterproof. Thus the vaginal secretion is simply serum which exudes from the surface of the squamous epithelium, and which acquires its normal creamy appearance by admixture with leukocytes and epithelial débris. Sliminess of the vaginal discharge is due to an excess of mucus which comes from the lining of the uterus and not from the vaginal wall. The normal vaginal secretion is definitely acid in reaction, and this acidity inhibits the life of most septic and pathogenic organisms. Thus the normal content of the vagina is a barrier to ascending infections, and it is generally sufficient to protect the uterus.

Douching does actual harm, for it washes away the normal acid secretion; kills the acid-producing bacteria which are the normal inhabitants of the vagina; kills the superficial layers of cells, and irritates the subjacent layers. Further, it promotes hyperemia of the parts, and thus increases the quantity of the secretion, favors menorrhagia, congestive dysmenorrhea, and intermenstrual congestive pain. This explains the fact that the woman who douches much never gets rid of her vaginal discharge, and generally has other complaints in addition. In septic infection of the uterine cavity after abortion or labor, vaginal douching clearly does not touch the spot at all, and intra-uterine douching is positively dangerous, as it sometimes causes fatal peritonitis by forcing septic material and noxious antiseptics through the tubes into the peritoneal cavity. The proper way to treat uterine sepsis is to dry clean the uterine cavity thoroughly, using a general anesthetic if necessary; to apply concentrated antiseptics with no excess of fluid; and thereafter to leave the uterus and vagina severely alone. In gonorrheal infection of the vulva the infection is very likely to be carried up through the vagina to the cervix, whence the gonococcus has a clear run over the mucous lining of both uterus and tubes. When the cervical canal is once infected, douching is futile, and proper disinfection under anesthesia is the only method likely to be effective.

Though antiseptic and medicated douches might well be dispensed with altogether, exceptions are, the palliative treatment of cancer of the uterus; when preparing a prolapsed and ulcerated vagina or cervix for operation the nurse may give one or two mildly antiseptic douches every day for a week or ten days, during which the patient is kept in bed and the vagina lightly packed; after vaginal operations, also, a few antiseptic douches are useful on those rare occasions in which the incisions become septic. In such cases the indication is definite. Under certain circumstances it is desirable to increase pelvic hyperemia, and for this purpose the prolonged warm douche is useful if given under proper supervision and for a limited period. Typical cases for this treatment are pelvic cellulitis following infection of a torn cervix with a more or less massive deposit of inflammatory exudate in the pelvic cellular tissue, where absorption is favored; inflammatory deposits in other pelvic tissues and organs. Thus, in the subacute phases of pelvic infection, vaginal douching is seen at its best. A slow stream of normal saline solution at a temperature of 100 F. to, say, 105 F., kept up for ten or twelve minutes once or twice a day for two or three weeks, forms a part of the proper treatment of these cases, but it must be done with the patient lying on her back.

3. **Recovering Dysentery Bacilli from Stools.**—Martin and Williams say that prior to the war the notion seems to have been widespread that the bacteriologic diagnosis of dysentery was as satisfactory as that of diphtheria, and measures for the control of epidemics have been founded to some extent on this assumption. Their experience of laboratory work in the eastern Mediterranean and in Egypt in 1915 and 1916, however, lead them to the conclusion that the chance of recovering dysentery bacilli from the stools was, after the first few days of the disease, a small one. Similar experience seems to have been had by Kolle and his co-workers, and by Seligmann and Cossmann. Seligmann at a laboratory near the front had opportunity to examine material from the recently evacuated sick. Under these conditions the results were that *B. dysenteriae* Shiga, was recovered in 38 per cent. of cases examined. Seligmann gives the percentage positive findings according to the state of the illness as follows: first week, 70 per cent.; second week, 53 per cent.; third week, 18 per cent.; fourth week and later, nil. The authors give the technic of their method and tabulate their percentage of positive results of 1,050 efforts to recover dysentery bacilli from stools at various stages of the disease, June to December, 1917, as follows: the first to fifth day, 68.0; sixth to tenth day, 17.4; eleventh to fifteenth day, 6.3; sixteenth to twentieth day, 3.1; twenty-first to thirtieth day, 1.5; thirty-first to fortieth day, 3.0; forty-first to fiftieth day, 3.0, and fifty-first to one hundreth day, 0.0. Their conclusions are that the chance of recovering dysentery bacilli rapidly diminished after the first few days. This appeared to be the case whether the stools remained characteristically dysenteric or not. The mucopus and epithelial *débris* discharged in the milder pathologic condition, and the necrosed coagulated superficial layers of the mucous membrane in the more serious, is, except in the earliest stages of the disease, invaded by hosts of intestinal organisms which soon overwhelm the dysentery bacilli originally present. This places a serious limit on the value of a bacteriologic diagnosis of dysentery. If reliance had been placed on the results of one examination, but 15 per cent. would have been discovered.

4. **Fatal Cases of Icterus Gravis Following Novarsenobillon Injections.**—The authors report two fatal cases of icterus gravis following injections of novarsenobillon, in soldiers, aged 26 and 20. These two cases resembled one another closely in their history, clinical manifestations and morbid anatomy. After receiving five doses of novarsenobillon followed by an interval (of seven and fourteen days, respectively), the patients became jaundiced. At first the symptoms were mild, but the jaundice gradually deepened, the liver became greatly reduced in size, persistent vomiting occurred, and the patients died twenty-one and forty days, respectively, after the onset of symptoms. Necropsy showed an acute cirrhosis of the liver. Both were cases of primary syphilis and showed no secondary manifestations. Case 1 gave a negative Wassermann reaction at the conclusion of treatment, but Case 2 gave a double positive reaction on the last occasion on which it was taken.

5. **Toxic Jaundice, with Atrophy of Liver.**—Crawford reports on three cases of toxic jaundice, with atrophy of liver, followed by regeneration and recovery. The patients were workers on T. N. T. manufacturing processes, and were exposed both to fume and skin contact. Two were men aged 29 and 22, and the third a woman of 19. The diagnosis, including the liver atrophy, was confirmed in each case by a government medical inspector of factories. The treatment was necessarily somewhat empirical. The skin was encouraged to act, the bowels kept free by a mild aperient (white mixture) and enemas; nourishment was given in small quantities at frequent intervals—milk and soda water, meat juice, thin broths, barley water, etc.; meat extracts were well tolerated, while fruit and fruit juices disagreed and caused vomiting. Injections of 6 ounces of a saturated solution of sodium bicarbonate were given by the rectum twice daily at the height of the illness, and the same salt by mouth also in a mixture and in milk to the amount of 2 drams daily; whenever this was discontinued the patients became worse. All three patients slowly rallied, and in the fifth or sixth week of the illness began definitely to improve. Convalescence, however, was slow and slight relapses frequent, the patient becoming drowsy and sick, and having recurrence of epigastric pain if allowed to do much at first, or if excited by friends or visitors. The chief points of interest in the cases were: 1. The regeneration of the liver after very extensive destruction. 2. The beneficial result of the exhibition of sodium bicarbonate in what seemed to be hopeless cases. 3. The absence of T. N. T. in the urine when it was being excreted by the bowel.

7. **Amyl Nitrite in Diagnosis of Mitral Stenosis.**—Morison says that in twelve cases of soldiers in whom presystolic murmurs were suspected, but in whom they could not be recognized with any degree of certainty, amyl nitrite (inhaled from a 3 minim capsule until a reaction was evident) brought forth unmistakable murmurs in six instances. Among the first signs of early mitral stenosis is an accentuated first sound; from this sign the sounds pass to a simple reduplication with accentuation; to perhaps a triplication, and thence to what may, or may not, be termed a murmur, according to the idiosyncrasies of the examiner. The point which is to be emphasized is that amyl nitrite, in a large proportion of cases, will raise the scale of the signs, bringing them nearer to a point in which a diagnosis becomes certain.

Lancet, London

April 20, 1918, 1, No. 4938

9 Modern English Skull. F. G. Parsons.—p. 557.
10 *Dysentery Bacilli: Differentiation of True Dysentery Bacilli from Allied Species. F. W. Andrewes.—p. 560.
11 *Etiology and Treatment of Trench Foot. J. E. Sweet, G. W. Norris and H. B. Wilmer.—p. 564.
12 Bacillemia Due to Various Organisms. J. G. Thomson.—p. 566.
13 Thermoprecipitin Reactions as Aid to Rapid Diagnosis of Bacillary Dysentery. L. F. Hirst.—p. 567.
14 Acute Infective Ophthalmoplegia, or Botulism. W. Harris.—p. 568.
15 *Epidemic of Toxic Ophthalmoplegia. A. J. Hall.—p. 658.
16 Case of Infection with Bothriocephalus Latus. T. T. O'Farrell.—p. 570.
17 Peripheral Nerve Lesions After Antitetanic Serum. S. C. Dyke.—p. 570.

10. **Dysentery Bacilli.**—Andrewes in differentiation of true from related forms of dysentery bacilli employed sugar reactions, indol formation, alkali formation in relation to initial acidity, the acid agglutination test, and agglutination with specific serums. With reference to the latter he finds: 1. Shiga's bacillus is readily agglutinated and to end titer by any of the stock Shiga serums. No instance of an inagglutinable Shiga has been met with in the course of this work. 2. *B. ambiguus* is not agglutinated by Shiga serums, even in low dilution. 3. Flexner Y bacilli are usually agglutinated to end titer, or its neighborhood, by one or another of the stock serums on the market, but different strains may respond to different serums. 4. Of the allied bacilli, *B. alkalescens* fails to agglutinate with Flexner Y serums within the usual time limit of four to five hours. 5. *B. dispar* is in much the same case. The serologic relations of *B. alkalescens* and *B. dispar* with the Flexner Y bacillus seem thus remote, though there is a suggestion of some small element in common. The species described as *B. ambiguus* and *B. alkalescens* seem fairly well defined and can be rejected as having no connection with dysentery. With regard to the lactose fermenting forms which Andrewes has grouped under the name *B. dispar*—more for the sake of a convenient general term than because he believes them to be a single entity—much more work is necessary. There is a general belief that the lactose fermenters can be excluded in dysentery work, and this is very likely correct; at least, they cannot be returned as dysentery bacilli. Even when all these simulators of *B. dysenteriae* are rejected there will doubtless remain a certain proportion of aberrant strains which cannot be thus accounted for, and some of these may be really atypical members of the Flexner Y group. Judging, however, from this series of 100 strains, the majority of which were sent as presenting abnormal features, such a residue would be very small.

11. **Treatment of Trench Foot.**—The authors try to show that the disease in all its forms starts from the interior, and that the infections which often mark the course of the disease are but the natural secondary manifestations of the reaction of devitalized tissues to infective agents; that, therefore, the treatment of the condition should be directed to the skin only in so far as these secondary infections have resulted in surgical conditions. Standing still in the cold and wet may be the causal factor, in "trench foot," as it must be the exciting factor, in which event, however, all men should be susceptible. Since all men under the same conditions do not fall victims, and since in the men who are affected these facts of clinical blood pressure which the authors herewith demonstrate are to be found, they feel compelled to the conclusion that "trench foot" is a disease incited by the effect of cold and inaction on a foot whose vasomotor system is physiologically impaired, and therefore, though more rarely, they encounter a "trench foot" and "trench knees." The explanation of "trench foot," based on their reasoning and their findings, is that there is a spasmodic contraction of the arterioles of the foot. The first result of this arteriole spasm, is ischemia with numbness, tingling, burning pain; the second result is a disturbance of capillary circulation, perhaps due to back pressure from the veins, perhaps due to the loss of rhythmicity of the driving force, perhaps due to the mere stagnation, with swelling of the foot from edema and diapedesis of red cells. This results in devitalization of the skin and the favoring of infectious processes, and may extend to actual gangrene. The number of cases of "trench foot" on which the authors have made blood-pressure estimations to date is fifty-three. Pressures were also taken on eight other cases not suffering with "trench foot" to serve as controls. With but one exception an inequality of the leg and arm pressure was found in the fifty-three cases of "trench foot," consisting in a very definite increase of the leg over the arm pressure. In the one exception the arm pressure exceeded the leg pressure; after forty-eight hours reverting to the condition found in the other fifty-two cases. In the eight patients used as controls the pressure was found equal in the arm and leg. The leg pressure was also found increased in direct proportion to the severity of the case. As the patient's condition improved the pressure was found to drop, or in some instances, few in number, the arm pressure would rise, and by the time the patient had recovered, the arm and leg pressure had become equal; thirteen cases so far have been observed which show this phenomenon. These thirteen cases, together with seven suffering from other conditions, justify the conclusion that the differences observed in "trench foot" cannot be ascribed to some technical fault in the authors' blood pressure readings. The differences in arm and leg pressure are as follows: the maximum 30 mm., the medium 15 to 20 mm., the minimum 8 to 10 mm.

The authors are convinced that potassium iodid is a most important addition to the treatment of "trench foot" for the prompt alleviation of pain, if for no other reason. In thirty-one cases potassium iodid in 20 gr. doses three times daily was given, with the result that there was a decided relief of pain in twenty-four hours after the first dose had been given. There was also coincidently with the relief of pain in many of the cases a fall of pressure, an average drop of the leg pressure of 10 to 15 mm. In all of the thirty-one cases the potassium iodid was withheld for twenty-four hours on three occasions. The complaint from the patient the following morning was increased pain and insomnia. In some of the cases the dose of potassium iodid was increased to 30 grains three times daily, as 20 grains did not seem sufficient to control the pain. One of the twenty-nine patients treated with potassium iodid alone was also a severe type, with marked discoloration and blebs of both feet. The potassium iodid was sufficient in this case to control the pain. Relief from pain is absolute, but from comparing the cases treated with potassium iodid with others treated by the ordinary methods, the relief is greater in the cases in which the potassium iodid alone has been given, and the duration of the attack is markedly shortened. The only other treatment used in these cases was hot-water bottles to the soles, boric powder dusted on the feet, and flannel bandages.

15. **Epidemic of Toxic Ophthalmoplegia.**—Hall describes a toxic ophthalmoplegia associated with acute asthenia and other nervous manifestations which occurred in epidemic form. The main features of the cases so far observed are as follows: The patient, while in ordinary health, begins to be languid and drowsy, with or without headache, and other symptoms of malaise. In a few hours or days the weakness has increased very much, and indeed, may amount to complete prostration, so that he lies helpless in bed and can hardly move a muscle. Together with this, the drowsiness becomes more marked and develops into real lethargy. Pyrexia may be absent throughout, or it may be present from the first, become severe, and persist. Cerebral excitement and delirium has been a prominent feature in some of the cases. In most of them local symptoms pointing to lesions in the bulbopontine area are present at some time or other. Of these ptosis, ophthalmoplegias of various extent, nystagmus, facial palsy of lower neuron type, unilateral or bilateral, speech affections, and dysphagia have occurred in different combinations in different cases. Muscular tremors of a curious kind have been noted in some; in one case this formed the most prominent symptom, and alcoholism was suspected. In some cases the general muscular asthenia has been more marked on one side of the body than on the other—either arm alone or arm and leg. But there has been, as yet, no evidence of a localized limb paralysis such as one commonly sees in acute poliomyelitis.

Hall has divided the cases provisionally into two broad groups: (1) the meningitic; (2) the asthenic. 1. Meningitic: These cases simulate meningitis very closely, and at a certain stage it is almost impossible to be sure they are not. So far the cerebrospinal fluid has shown no organisms or abnormal cells and its pressure has not been increased, and in a few days the symptoms subside and improvement sets in. Four of the cases were of this type. 2. Asthenic: The asthenic group presents a clinical picture of drowsiness and languor replacing excitement and delirium. The patient without any obvious cause is rendered quite helpless, and lies in bed like a log, unable to turn over or to move the limbs without assistance. There is usually no pyrexia throughout. The effect of the muscular asthenia in the neck and face is very extraordinary. The first case of the series was a boy, aged 15. The facies suggested a myasthenia gravis. In another case, a woman, aged 56, the facial expression was so suggestive of "Parkinson's mask" that Hall thought at first she must have paralysis agitans. As a matter of fact, this was the case referred to above in which general muscular tremors were the chief symptoms. In a few days the symptoms disappeared. In this group there is also a peculiar posture of the hands across the trunk and a kind of plastic tone, not unlike that seen in paralysis agitans. The tremor, however, has no resemblance to the tremor of that disease. Although in most of the cases the symptoms begin to disappear in a few days or a week or two, yet in one case, a man, they still persist after three weeks. The sphincters are not as a rule affected.

Of the ten cases seen up to the present there were: males, four; females, six; ages range from 9 to 70. Only one was under 10. Eight were over 20. It is evident that the etiologic factor is something which acts as a widespread poison on the central nervous system. Such a poison might be of organic or of inorganic origin. It may be connected with some poisonous element in the food or some deficiency of essential ingredients. Attention has been called to the similarity between these cases and certain outbreaks of botulism, due to the consumption of food infected by *B. botulinus*. Investigations on these lines are proceeding. So far, only in one case has the patient in any way attributed the illness to food.

Bulletin de l'Académie de Médecine, Paris

April 9, 1918, **79**, No. 14

18 *Magnesium and Cancer. Dubard.—p. 295.
19 Dermatitis, etc. Produced by Cabbage Caterpillar. E. Crouzel.—p. 297.

April 16, 1918, **79**, No. 15

20 Repair of Wounds of Palate and Nasal Fossas. H. Morestin.—p. 303.
21 Rapid Healing under Carrel Treatment after Mastoid Operations. G. Mahu.—p. 309.
22 *Alarmists. C. Vallon.—p. 312.

18. **Magnesium and Cancer.**—Dubard gives magnesium carbonate (from 8 to 12 gm. a day) after operations for cancer. He found that marked improvement followed this while ordinary alkaline medication, such as Vichy water, had an unfavorable influence in incipient malignant disease. He believes that there is some connection between neuropathic disorders and the origin and course of cancer, and we all know the important part played by magnesium in the normal functioning of the nervous system. Loss of magnesium seems to favor the onset and development of malignant disease, while administration of magnesium serves to restore these losses and exert a favorable influence on tumors, warts, papillomas, etc. Between 1900 and 1916 he performed 550 operations for cancer, and of 360 patients kept under observation 125, that is, 34 per cent., are known to be living five years at least since the operation. Others have died after survivals of six or seven years. He has thus a global total of 24 per cent. of relatively long survival. His systematic administration of magnesium carbonate kept up for months, he thinks, has had much to do with these favorable experiences. Occasional association with phosphoric acid, sodium fluorid or manganese seemed to aid in the assimilation of the magnesium, he says. The prevalence of cancer in the elderly he is inclined to explain by the substitution in the tissues of calcium for magnesium with advancing age. Some organic combination of magnesium, he adds, might be better than the *magnésie blanche* he has been using.

22. **Alarmists.**—Vallon presents arguments to show the necessity to beware of alarmists during the war. They are either seeking to depress the morale of the people and army, and in that case they come in conflict with the espionage and similar laws, or they are mentally irresponsible. There is nothing astonishing in the fact that pathologic melancholia and other psychoses take this form of alarmist pessimism in this war environment. It is the alienist's task to distinguish between the traitorous and the pathologic alarmists.

Bulletins de la Société Médicale des Hôpitaux, Paris

Feb. 15, 1918, **42**, No. 6

23 *Transfusion in Measles. L. Ribadeau-Dumas and E. Brissaud.—p. 147.
24 *Relics of Inoculation Tubercle. Ribadeau-Dumas and Perrochon.—p. 150.
25 *Spinal Fluid in General Paresis. J. A. Sicard and H. Roger.—p. 154.
26 *Slow Endocarditis. H. Fayolle.—p. 159. R. Debré.—p. 163.
27 Autochthonous Malarial Aortitis. G. Rosenthal and S. Bloch.—p. 166.

Feb. 22, 1918, **42**, No. 7

28 Aneurysm of Aorta with Inherited Syphilis. H. Barbier.—p. 173.
29 *Paroxysmal Vomiting with Inherited Syphilis. H. Barbier.—p. 174.
30 Peripheral Facial Paralysis. Lévy.—p. 177.
31 *Syringe for Aspiration and Transfusion. J. E. Larché.—p. 178.
32 *Chronic Arsenical Poisoning. J. A. Sicard and H. Roger.—p. 181.
33 *The Dyspepsia of Repatriated War Prisoners. F. Ramond and A. Petit.—p. 186.
34 Spirochetosis. Manine.—p. 190.
35 The Resisting Power of the Corpuscles in Malaria. E. May.—p. 193.
36 Suprarenal Symptoms with Chronic Nephritis. R. Porak.—p. 197.

23. **Transfusion in Measles.**—Two Arabs were brought to the base hospital with extreme collapse in the course of measles. One speedily died, but the other recovered after transfusion of citrated blood from a measles convalescent. The eruption was diffuse and ecchymotic, the fever up to 41 C., with collapse, anuria, incontinence and toxic dyspnea. After transfusion of 100 c.c. of blood from a man who had been cured of measles for a week, in two hours the vital functions had recuperated and speedy recovery followed.

24. **The Initial Lesion in Tuberculosis.**—Dumas and Perrochon in making roentgen examination of the chests of men with various diseases or wounds or healthy controls made a special point of investigating for some primary initial tuberculous lesion, dating probably from childhood. They found evidences of such in almost two thirds of the adults examined.

25. **The Reaction in the Spinal Fluid in General Paresis.**—Sicard and Roger reiterate that the Bordet-Wassermann reaction is always positive in the cerebrospinal fluid with progressive paralysis, and is irreducible even under intensive treatment. Their findings have been invariably positive in more than 100 cases of general paresis in the last six years. They insist that negative findings disprove the diagnosis of general paresis. In the blood, the reaction was positive only in 95 per cent. of their cases, and it veered to negative in all but 35 per cent. under intravenous arsphenamin treatment.

26. **Slow Endocarditis.**—Fayolle reports the clinical history of a case in a man of 33, and Debré the necropsy findings in a case previously published. Debré has found constantly in his cases a streptococcus nonvirulent for laboratory animals, and its cultures do not form a halo on solid mediums with blood. It turns hemoglobin green, and hence Schottmüller calls it the *Streptococcus viridans*. The endocarditis is of the vegetative type; enlargement of the spleen and multiple joint lesions are constant, as also multiple infarcts in the abdominal organs. Subacute nephritis is always found at necropsy. The rupture of some intracranial aneurysm is usually responsible for death.

29. **Paroxysmal Visceral Disturbances with Inherited Syphilis.**—Barbier emphasizes the frequency with inherited syphilis of localized syndromes, such as paroxysmal vomiting, paroxysmal enteralgia and paroxysmal incontinence of urine. The paroxysmal vomiting seems to be most frequent between the ages of 5 and 10. It occurs usually in the morning, fasting, generally preceded by frontal headache a few hours or even days before the paroxysm of vomiting comes on. The headache keeps up during the vomiting, but stops when the vomiting is over. The child's sleep is not so sound as usual, and there may be signs of insufficiency of the liver. There is no nausea; the vomiting occurs suddenly, in a gush. After expulsion of the food in the stomach, the vomit seems to be pure gastric juice. The child may thus vomit twenty times in the twenty-four hours, and there may be some blood in the vomit at last. As soon as the child stops vomiting it returns to its play. The attacks may last from a few hours to two or three days. There is no periodicity about their recurrence;

there may be two or three in a few months and then no more for several years, or there may be two or three a year. They are rarely closer together than this. Occasionally the attacks are accompanied by meningeal symytoms, somnolence, arrhythmia, and tendon and pupil changes. Unless a positive Wassermann reaction can be obtained, it is often difficult to differentiate this inherited syphilis vomiting from that with an incipient cerebellar tumor or tuberculous meningitis. With the latter there is usually fever at times, while there is none with this syphilitic vomiting. Appendicitis may be suggested by this latter, but lumbar puncture should be done before appendicectomy in dubious cases. Attacks of enteralgia with diarrhea may alternate with the vomiting, and incontinence of urine may be referred to the same cause. This incontinence may accompany the gastric crisis, or there may be attacks of transient incontinence occurring alone. A positive Wassermann reaction in such cases explains the incontinence. He treats such children with weak doses by the mouth, rejecting the inunction method which he regards as dangerous for children. He knows of cases of sudden death after mercurial inunctions.

31. **Syringe for Both Aspiration and Transfusion.**—Larché's *transfuso-aspirateur* is fitted with a combination trocar-needle. A serous or purulent pleural effusion can be punctured and evacuated and an aseptic gas or disinfecting solution can be injected into the cavity, all through the one syringe and at the one operation.

32. **Chronic Arsenical Intoxication After Arsphenamin Treatment.**—Sicard and Roger discuss the three types of disturbances that may follow intravenous treatment with any of the new preparations of arsenic: disturbances in the nature of anaphylaxis, disturbances from the mixed reaction of the arsenic on the spirochetes—their virulence enhanced in response to the action on them—and disturbances from pure arsenical intoxication. They report here five cases of general paresis in which intravenous injection of a French preparation of arsphenamin had been rapidly pushed to a dose of about 1.8 gm. per week, or 15 or 30 cg. had been given daily. This intensive treatment was given at the demand of the patients and their families, but after from 11 to 12 gm. had been administered, erythema, falling of the hair, abscesses and ulcerations in one of the men testified to the chronic arsenical poisoning, and he died in consequence of ulcerations in pharynx and tongue, with hemorrhages. The others all seem to have benefited materially by the treatment, but the Wassermann reaction is still positive. These men took 15 or 17 gm. in the course of two or three months. Sicard found the skin reaction to iodin a reliable means of detecting the approach of arsenical intoxication. When the skin has reached the limit of its endurance, painting with tincture of iodin brings out a crop of blisters. He applies this test to the forearm, and the dermatitis with the vesicles is apparent the next day. This sign became manifest after intravenous injection of from 10 to 12 gm. of novarsenobenzol in the course of about two months, and the reaction was positive a long time after suspension of the drug. With the big weekly doses, the kidneys and the liver suffered most, and by the eighth or ninth gram, albuminuria and subjaundice were evident. With the small daily doses, the kidneys and liver did not seem to suffer appreciably and there were no symptoms from them, but the ectoderm seemed to be unable to stand more than 12 gm. in the two months.

33. **Dyspepsia in Men Returning from Prison Camps.**—Ramond and Petit have examined forty men repatriated after long imprisonment in Germany, and practically all were suffering from acute or subacute gastro-enteritis, the condition much like those in herbivora kept on a meat diet. The corroboratory evidence of all shows that the diet at the Würzburg, Darmstadt and Gräfenburg camps consisted of bread containing bran, straw, potato, corn and sawdust, barley coffee, no sugar, bean or turnip soup, and at supper 40 gm. of cheese of the Brie type or a piece of sausage the size of one's thumb, or herring. They comment that "the Germans have no excuse for these scanty rations, for the potato harvest in 1917 was particularly good, and the stock of pigs was never so large. The Austrians, on the other hand, although with greater scarcity of foodstuffs, yet have made a point of respecting the international conventions which they had signed." Among the repatriated from Germany whom they examined, fully 10 per cent. had confirmed gastric ulcer; four required an operation for stenosis of the pylorus.

"These gastric disturbances," they add, "are not the only ones nor the most frequent. There is the long, sad train of those with advanced consumption. What the shells and the poison gases fail to accomplish, the prison camps complete. We witness thus the slow and implacable death agony of all our young men, without a single word of protest being raised. And while our sons are perishing obscurely in the jails and camps of Germany, France, always foolishly generous, does not reciprocate. Our German prisoners have abundant food, which they can vary; they enjoy excellent health. When the war is over they will take up again the economic struggle, with all their forces intact, and it will not be our soldiers returning anemic from Germany, in greatly diminished numbers, who will be able to crown the victory of our arms with the economic victory."

Paris Médical

March 30, 1918, 8, No. 13

37 *The Psychoses of Malaria. A. Porot and R. A. Gutmann.—p. 241.
38 Arterial Findings with Oscillometer as Guide in Operating. G. Jeanneney.—p. 248.
39 *Bacteriologic Findings during Operations. G. Rosenthal.—p. 251.

April 6, 1918, 8, No. 14

40 *War Bread from Biologic Standpoint. E. Weill, and G. Mouriquand.—p. 258.
41 The Meat Question. G. Linossier.—p. 267.
42 The Milk Supply of Paris. C. Porcher.—p. 269.
43 Sugar and Saccharine. G. Pouchet.—p. 273.
44 The Soldiers' Ration. M. Labbé.—p. 275.

37. **Psychoses in Malaria.**—Porot and Gutmann describe three varieties of acute malarial psychoses and four of the prolonged type, with several subvarieties. They are in charge of a *centre neurologique*, and their experience emphasizes the imperative necessity for vigorous and persevering treatment (quinin) in all cases of the mental confusional state, the initial psychopathy, in malaria. Under proper treatment this often subsides, and thus is warded off the prolonged and rebellious form of malarial psychopathies. In one of the typical cases reported, the young man developed the syndrome of dementia praecox within a year of contracting malaria in Macedonia. No other pathologic antecedents were known in the personal or family history except that he had had convulsions as a child. In another case the man of 37 developed acute mania but under seven months of sanatorium treatment regained his mental poise, although still somewhat excitable.

39. **Bacteriologic Control at Advanced Surgical Station.**—Rosenthal comments on the importance of the bacteriologist's statement that a wounded man recently brought in, and apparently not gravely wounded, yet harbors the perfringens for instance. The surgeon is thus warned of the necessity for extra thoroughness in his operation. The Carrel-Dakin method seems to be especially effectual in clearing out the large anaerobes. Every war operation may be modified by the bacteriologic findings, either spurring to extra care or justifying less vigorous measures. The bacteriologic control during the intervention must be restricted, of course, to rapid examination with the ultramicroscope when possible, without staining or some simple stain, the gram—these will readily show the group to which the microbes in the specimen belong. The perfringens, in particular, is the one that seems most to be dreaded. The bacteriologist thus in five minutes can tell the surgeon that the wound is aseptic or contains diplococci, or there is complex diplobacillary infection with both aerobes and anaerobes.

40. **War Bread.**—This is a study from the biologic standpoint of the various materials now used in making bread. Among the practical conclusions is the suggestion that possibly an aqueous extract of bran, rice hulls or other hulls of grains might contain the vitamins necessary for health, and if bread was made with this "bran water" it would not

be necessary to burden the digestive tract with so much cellulose. Weill and Mouriquand report considerable experimental research on pigeons, confirming the importance of these vitamins. They say, "Notwithstanding the Americans, we are at present obliged to live almost exclusively on our supply of wheat, and the 1917 crop was below the average." Their experiences confirm further that bread made with lime water, instead of ordinary water, seems to keep better and be more palatable, free from the bitter taste which the "war bread" sometimes leaves in the mouth. The Italian "Bergamo bread" is made of whole grain without grinding. It is subjected to maceration for two days, in water at 20 C., and it is then mashed and used directly for making dough. There seems to be some germination of the grain, and this seemed to increase the nutritional value of the grains for guinea-pigs in their tests. The germination possibly aids in transforming the albumins into peptones, or amino-acids, and the starch into dextrin and glucose.

Presse Médicale, Paris

March 21, 1918, **26**, No. 17

45 *Auto-Bone Flap for Gap in Skull. R. Le Fur.—p. 153.
46 Arsenic Preparations in Relapsing Fever. Dumitresco-Mante.—p. 155.

March 28, 1918, **26**, No. 18

47 *Acute Rheumatism with Chronic Heart Disease. O. Josué, M. Parturier and A. Berrut.—p. 161.
48 Extraction of Projectiles in Hilum of Lung. R. Didier.—p. 162.
49 Frequency of Association of Streptococci and Staphylococci in Chronic Osteitis. E. S. Harde and A. Hauser.—p. 164.

45. **Cranioplasty.**—Le Fur has applied in thirty-seven cases the technic he describes with illustrations, and has found it constantly reliable while its simplicity and ease commend it above other methods. He splits horizontally the bone of the skull over the desired area, and then turns the upper slice back, as if on a hinge, thus covering the opening in the skull. The periosteum is loosened back from the farther edge of the bone flap thus turned over, and it is used to suture the flap to the periosteum of the skull beyond. The skull then shows the rectangular flap with its inside turned up, and the rectangular space in the skull beyond, from which the flap was split off. The tables of the skull are easily separated, and the flap is taken large enough to extend beyond the hole to be covered. The method is applicable even for very large gaps in the skull, as two flaps can be cut and turned back to overlap, thus covering a large area.

47. **Recurring Acute Articular Rheumatism in the Course of Long Established Heart Disease.**—Josué and his coworkers refer to *poussées rhumatismales* in the form of joint swelling and pain, or pain in the muscles occurring in the course of chronic heart disease. They are liable to be mistaken for tonsillitis or influenza or acute bronchitis. The heart symptoms are overshadowed by those from the exacerbation of the rheumatismal infection. Or it may act on the heart alone, sparing the joints, including a febrile asystole with or without general disturbance; congestion of the liver; edema of the legs; dark colored, scanty urine and arrhythmia. Under the salicylates the symptoms promptly retrogress, while they persist stubbornly under other measures. They warn that the doses must be large enough to be effectual, from 6 to 8 gm. daily for several days, continuing with 4 gm. for some time. They give about the same amount of sodium bicarbonate with it to insure tolerance by the stomach. They give children 0.5 gm. per year of age up to 6, and then 3 gm. daily. Unless the salicylic medication is vigorous and long kept up, the infection is not conquered but persists in an almost latent form continuing its ravages to irreparable lesions.

Progrès Médical, Paris

April 6, 1918, **33**, No. 14

50 *Malaria in France. L. Leger, G. Mouriquand and A. de Kerdrel.—p. 117.
51 Traumatic Total Facial Diplegia. L. Marchand.—p. 120.

April 13, 1918, **33**, No. 15

52 *"Embalming" Treatment of Wounds. L. Mencière.—p. 125.
53 Psycho-Pathologic Explanation of Confusional Mental States. G. L. Duprat.—p. 1[illegible].
54 Mechanism of Psychotherapy for Functional Contractures. H. Piéron.—p. 132.
55 Case of Concussion of the Chest. P. Batigne.—p. 135.

50. **Malaria in France.**—It was early recognized that the men returning from Macedonia with malaria might import the disease and form foci of infection for others, creating new foci or rousing long slumbering foci. A commission was appointed to study the subject, and the country was charted to show the regions where the anopheles abounds and where it cannot be found. The men returned to France with malaria are now distributed in the nonanopheles districts, but before the danger was recognized, several active foci had developed. In some the infection was traced to soldiers from French China, carriers of the malaria parasites.

52. **The Mencière Treatment for War Wounds.**—Mencière's aim is to fill the wound with a fluid which will hold the microbes in check while soothing and relieving pain. The man can then be safely left without further treatment for several hours or even days, confident that the wound will be found practically *in statu quo* when conditions permit thorough surgical treatment. Mencière here quotes the testimony of numerous army surgeons on the efficacy of this embalming treatment in its special field, that is, when a big drive is on, or other conditions prevent careful surgery at once. He says that the formula that has stood the test of thousands of experiences is 10 gm. each of guaiacol, eucalyptol and balsam of Peru; 10 gm. of iodoform; 100 gm. alcohol and ether to 1 liter. For one or two applications only, for severe gangrenous wounds, he substitutes 10 gm. of benzoic acid in the formula, or merely adds 9 gm. of benzoic acid to the first formula. He explains the action of the different ingredients, especially the penetrating action of the ether which follows the microbes into the depths of the tissues lining the cavity, where the microbes are most active; those free in the cavity are already dead. The fluid is sprayed copiously into the wound, and this can be done by any one. It does not interfere with the surgeon's work later. The fluid can be used further as a systematic dressing after the surgical toilet of the wound. The protection conferred by this dressing seems to be only for twenty-four hours at most. The official instructions from the army medical department, dated October, 1917, state that, in case of precipitate evacuation of the wounded, after excision of devitalized tissue it is advisable to apply some dressing the action of which would continue during the entire duration of the transportation. No particular dressing was specified, but Mencière insists that his formula answers the purpose, and that 1,200 or 1,300 army surgeons are using it.

Revue de Médecine, Paris

Sept.-Oct., 1916, **35**, No. 9-10, Pub'd. Feb., 1918

56 *Concussion of Cervical Spinal Cord. H. Claude and J. Lhermitte.—p. 535.
57 Cerebellar Parasyndrome from Wound of Worm. A. Léri.—p. 555.
58 *Obliteration of Arteries and Nervous Ischemia in the Wounded. R. Desplats and A. Buquet.—p. 578.
59 *Spasmophilia and Intoxication as Factors in Epilepsy. L. Plantier.—p. 620.
60 Tuberculomas. Gougerot and Dénéchau.—p. 644.
61 Skin Reaction to Vaccine. H. Pied.—p. 658.

56. **Concussion of Cervical Spinal Cord.**—Claude and Lhermitte describe cases from their experience in which the concussion of the spinal cord in the neck from a projectile entailed grave quadriplegia, hemiplegia or monoplegia and a cerebellospasmodic set of symptoms without actual paralysis. They have encountered also a number of abortive cases of these various types. Notwithstanding the apparent gravity of the paralysis, the evolution has been constantly favorable. Motor function and sensibility have gradually returned. This is in marked contrast to the course of similar lesions in the dorsal, lumbar and sacral spinal cord.

58. **Nervous Disturbances from Wounds of Arteries.**—Desplats and Buquet declare that not enough attention has been paid to injury of the medium seized arteries in the nervous disturbances of the wounded. Obliteration of a trunk artery is enough in itself to entail motor, sensory,

and trophic disturbances and modify the electric reactions. The terminal distribution is characteristic, and these disturbances are the more pronounced the higher the segment of the artery involved, and at points where collateral circulation is less readily established, especially in the arm. The zone of the axillary artery is the most dangerous. Traumatic obliteration of this artery may alone entail ulnar, median or radial paralysis, with the reaction of degeneration in the segment of the arm involved and complete anesthesia of the tips of the fingers. The fingers may also show characteristic deformity. This set of symptoms becomes attenuated as the obliteration or compression of the artery is farther from the trunk. In the leg the symptoms are masked by the tendency to gangrene. In the majority of cases, however, both the artery and the nerve are injured by the projectile. To operate on the nerve and neglect the artery is as futile as to operate on the artery and neglect the nerve.

59. **Epilepsy.**—Plantier epitomizes his opinion of epilepsy in the statement that it is a "toxicate of spasmophilia." Spasmophilia is usually an inherited taint, but it may be acquired in the course of lead or alcohol, coffee or tea poisoning, or the spasmophilia may develop from some local cause, possibly relics of meningitis or encephalitis, consecutive to some acute infection in early childhood. We all know instances where extraction of a wisdom tooth, of a polyp in the nose, or of hardened wax in the ear has arrested a tendency to epilepsy even of long standing. He remarks that it is useful to read over the cases of this kind, that are so numerous in the literature, in order to impress on one's mind the imperious obligation in the presence of an epileptic to eliminate every possible acquired local cause for spasmophilia before ascribing it to heredity, or diagnosing it as common, essential epilepsy. The continuous abnormal excitation transmitted to the motor neuron from the foreign body, sequester, calculus, helminths or carious tooth, keeps up a kind of tetanization of the hyperactive motor nerve cell, and the partial or complete epileptic seizure is the result. This is hastened and intensified by any superposed toxic action. Digestive auto-intoxication is the main and usually the only source for the toxic action. He has found the liver pathologic in almost every epileptic he has had occasion to examine. This coincidence explains the absolutely unexpected arrest of the seizures in many epileptics who were given treatment addressed to the liver.

Schweizer Archiv für Neurologie und Psychiatrie, Zurich

1917, **1**, No. 1

62 Definition of "Somatogenous" and "Psychogenous." Dubois.—p. 8.
63 The Mendelian Laws in Psychoses. E. Bleuler.—p. 19.
64 Anatomic Findings in Congenital Spastic Paraparesis in Adult Idiot. During.—p. 41.
65 Aplasia and Hypoplasia of Neocerebellum. R. Brun.—p. 61. To be continued.
66 The Static Tonus and Its Rôle in Nervous Pathology. M. Egger.—p. 124.
67 The Connecting Tracts between the Cerebellum and the Stem of the Brain. H. Uemura.—p. 151. Concluded in No. 2, p. 342.

Gazzetta degli Ospedali e delle Cliniche, Milan

March 21, 1918, **39**, No. 23

68 Mercury Bicarbonate in Analysis of Ammonia and Purin Bodies in Organic Fluids. E. Pittarelli.—p. 225.

March 24, 1918, **39**, No. 24

69 *Reaction of the Blood to Tuberculin. A. Barlocco.—p. 233.

March 31, 1918, **39**, No. 26

70 *Treatment of Frozen Feet. G. Cocci.—p. 254.

69. **Reaction of Blood to Tuberculin.**—Barlocco describes the morphologic reaction of the blood to the cutaneous and subcutaneous introduction of tuberculin in healthy and tuberculous subjects. In the healthy there did not seem to be any appreciable change in the blood after subcutaneous injection of 0.001 gm. of tuberculin, but with a larger dose there was pronounced hyperleukocytosis with neutrophilia. In the tuberculous, injection of 0.001 gm. tuberculin, or even half this, induced a neutrophil hyperleukocytosis with sometimes slight eosinophilia. This reaction is independent of the eventual thermic reaction to the tuberculin. He gives charts and tables from typical cases to illustrate these findings, as also the findings after the skin tuberculin test. They seem to be the same in all these conditions, differing merely in degree and proportionate to the amount of tuberculin used. The lymphocyte curve does not seem to be modified.

70. **Treatment of Frozen Feet.**—Cocci refers to extremely grave freezing of the feet with gangrene and mutilation. In his service the mortality of these cases with freezing of the third degree was from 70 to 80 per cent. until he began to sear them with a red hot iron, passing it flat and slowly over the gangrenous surface to the line of demarcation. The tissues thus destroyed are only those already devitalized by the gangrene. The heat induces such an afflux of lymph and blood that the tissues beneath start to heal naturally, and as the scorched tissues are cast off, healthy granulations are found beneath. The fever subsides and with it the edema, the gangrene becoming dry gangrene. This favorable outcome is not constant, but it occurs often enough to render this method of treatment far superior to anything else he has tried, and saved months of suffering and extensive mutilations in many cases. The streptococcus was found in a pure culture in the blood in most of these severe cases.

Policlinico, Rome

April 14, 1918, **25**, No. 15

71 *Dermatitis in Sorghum Cutters. G. Hoffer.—p. 341.
72 Nonirritating Treatment of Scabies. L. Tommasi.—p. 343.
73 Sudden Death in Six Months' Infant with Previously Latent Inherited Syphilis. C. Ruhl.—p. 349.

April 21, 1918, **25**, No. 16

74 Frame for Applying Plaster Cast under Roentgen Control. L. Cavazzeni.—p. 365.
75 *Clinical Signs of Anatomic Healing of Pulmonary Tuberculosis. P. Rusca.—p. 369.
76 Primary Edema in Malaria. F. Paoletti.—p. 373.

71. **Dermatitis in Sorghum Harvesters.**—Hoffer found a peculiar dermatitis in twenty-five members of seven different families engaged in cutting sorghum. It gradually subsided in the course of three or four weeks. A parasite resembling a parasite found in flour was found in the sorghum and was probably responsible for the dermatitis.

75. **Signs of Healing Tuberculous Process.**—Rusca analyzes the signs he has found in soldiers showing a clinical cure of pulmonary tuberculosis under prolonged sanatorium treatment: After all the previous symptoms have subsided and the general health has improved, there may be pains in the region that was the site of the process. As the fibrous cicatricial tissue forms it may pull on the adjoining tissues, and the nearer to the pleura, the more pronounced the pain. The toxi-infectious process may have rendered the nerves in the region more sensitive. These painful sensations are a sign of healing; they are not accompanied by return of the old symptoms, and there is no tender spot to be found in the region. The painful sensation is continuous, and has no connection with the respiration or the position, and it subsides in a few days. This pain with a healing tuberculous process is probably often mistaken for casual neuralgia, or congestion. Rusca also calls attention to the occurrence of minute hemoptysis as another sign of the healing of the focus. It occurred after effort, as for example at defecation, and the hemoptysis seemed to be connected with the painful sensation mentioned above, as the latter usually preceded, accompanied and followed it. The sputum was slightly tinged with blood, not enough to redden it, but merely to give it a salmon-color tint. The microscope shows well preserved elements of the blood but no pus or tubercle bacilli. Several writers have emphasized the tendency to capillary hemorrhage in the sclerosis of a tuberculous focus in the lung. Extensive hemoptysis occurs with destructive processes, but the capillary hemorrhages seem to occur only in the circumscribed, well encapsulated processes, or with the penetration of newly formed vessels into the forming cicatricial fibrous tissue. This salmon-tint hemoptysis was never preceded or followed by the slightest exacerbation of the auscultation findings. The bleeding probably proceeds from some newly formed and not quite complete new blood

vessel, which had ruptured under the preceding physical exertion. This slight hemoptysis is thus an additional proof of the anatomic repair going on. His conclusions that the above mentioned local pains and the minute hemoptysis are signs of favorable import are based on wide experience of numbers of cases traced for months or years afterward.

Riforma Medica, Naples

March 30, 1918, **34**, No. 13

77 *Gastric Ulceration Effect of Poison Gases. Zagari.—p. 242.
78 *To Promote Healing of Skin. D. Taddei.—p. 245.
79 Noma Following Paratyphoid B in Child. E. Romanelli.—p. 248.
80 The Present Status of the Thymic Syndrome. R. de Nunno.—p. 250.

April 6, 1918, **34**, No. 14

81 *The Stool Signs of Liver Disease. R. Campana.—p. 262.
82 *The Granular Red Corpuscle Count. F. Ravenna.—p. 263.
83 The Mouth and Pharynx in Typhoid. A. Campani and F. Bergolli.—p. 264.
84 *Diagnosis of Cancer of the Liver. A. Ferrannini.—p. 269.

77. **Hematemesis after Poisoning from War Gases.**—Zagari reports the case of a previously healthy robust soldier who was knocked down unconscious by an exploding bomb which contained a toxic gas. He was not picked up and did not regain consciousness for about twenty-four hours. While others suffered from the effects of the gas in the air passages, he had no symptoms from them and no laceration, merely a pain in the lumbar region and a little blood in the urine, and in a few days symptoms indicating ulceration in the stomach. The ninth day he vomited blood, and the hematemesis recurred five times in the following three months. Under treatment of the gastric ulcer and the hemorrhagic tendency, the man recuperated and he has had no further symptoms on the part of the stomach for two months to date. [A communication was read recently before the Paris Société des Hôpitaux which was struck out of the published records by the censor, but brief reference to it by another speaker showed that it was a similar report on gastric ulceration from the toxic action of war gases.]

78. **Treatment to Hasten Healing of Epithelium.**—Taddei reports that his experience in thousands of cases has confirmed the way in which iodin promotes the healing over of a wound when applied after the cavity of the wound has filled up with granulations. He lays a strip of ordinary adhesive plaster on a compress and swabs the adhesive side with a 10 per cent. tincture of iodin. When dry, it is cut in strips 4 or 5 mm. wide and from 3 to 8 cm. long and these strips are applied to the edge of the wound, the strip fitting for 1 mm. on the epithelial margin of the wound and the other 3 or 4 mm. on the granulation tissue. Three, four or six of these strips are applied to outline the wound like a narrow frame. The iodin applied in this way seems to stimulate the production of epithelium while protecting it when the dressings are changed. He states that in many cases the epithelium healed over as promptly and effectually as if Thiersch grafts had been applied. The plaster alone without the iodin, does not answer the purpose so well.

81. **Stool Signs of Liver Disease.**—Campana remarks that when there is an irritative process in the liver, the stools show cellular detritus, nuclei of liver cells, leukocytes, the bile pigments of these cells and glycogen. These pass out of the liver with the bile into the intestines, and can be detected in the stools. The patient must be kept for a few days before on starchy and albuminoid food, and the teeth must be clean and the anus washed with soap and thoroughly dried. He refers in particular to the findings in the stools as revealing syphilitic hepatitis.

82. **Granular Red Corpuscles.**—Ravenna declares that the best method known to date for showing up the granular reds is with a 0.8 per thousand solution of brilliant cresyl blue in a 7 or 8 per thousand solution of sodium chlorid, kept at 37 C. for fifteen minutes, or at 16 or 18 C. for thirty minutes.

84. **Diagnosis of Cancer of the Liver.**—Ferrannini emphasizes that metastasis is less frequent and less early with cancer of the liver than with malignant disease elsewhere, as a rule. He cites twenty authors in the last twenty years who have come to this conclusion. In three cases in adults in his own experience there was no trace of involvement of the supraclavicular glands but merely some enlargement of the retroperitoneal glands, and some in the omentum. There was no pronounced emaciation, and in one patient the complexion was ruddy, except where there was a tendency to cyanosis from the interference with the circulation by the ascites. The patients were at the cancer age, near 50; the liver felt knobby, and it had increased rapidly in size; there was no jaundice or eosinophilia, but there were symptoms on the part of the stomach resembling those with gastric cancer. Echinococcus disease seemed probable at first, but this diagnosis was dropped on discovery of the enlarged glands back of the peritoneum and in the omentum, which also excluded syphilitic gummatous disease of the liver. He emphasizes these differentiating points as they contrast with those of Griffith's recent compilation of fifty-seven cases of cancer of the liver in children. Cachexia and metastasis were common, but ascites and jaundice were rare among the children.

Rivista Critica di Clinica Medica, Florence

Feb. 23, 1918, **19**, No. 8

85 *Determination of Glucose in the Urine. G. Ugdulena.—p. 85.

March 30, 1918, **19**, No. 13

86 Adenoids and Military Service. V. Grazzi.—p. 145.

April 13, 1918, **19**, No. 15

87 Dysenteriform Diseases at a Base Hospital. A. Roccavilla.—p. 169. Conclusion.

85. **Quantitative Determination of Glucose in the Urine.**—Ugdulena comments on the importance from the military standpoint of the determination of permanent glycosuria and the elimination of the factitious—all of which requires repeated examinations, and a simplified technic. For this he uses two sets of ten test tubes. The first ten tubes have straight sides and serve for the dilution of the urine. The first tube is filled with urine. In the other nine he places 2 c.c. of urine in each, and adds 1, 2 or 3, up to 9 c.c. of distilled water, the number of cubic centimeters of fluid in each corresponding to the number of the tube in the series. The ten tubes of the second set taper to a point. The Fehling reagent solution is placed in each up to the 5 c.c. mark and then urine is added to the mark showing 2.37 c.c. in addition. The urine for this purpose is taken for each tube in the second set from the correspondingly numbered tube of the first set. After they have been thoroughly agitated, a few drops of liquid petrolatum are poured on top to form an airtight covering, several millimeters thick. The tubes of the second set are then placed in their standard in the water bath and kept for ten minutes at a temperature of 95 or 100 C. The number of the test tube which contains the minimal dilution compatible with complete reduction of the Fehling solution, represents the percentage of glucose in the urine. No calculations are necessary, as we know that 50 c.c. of Fehling's solution is reduced by 23.75 c.c. of urine containing 1 per cent. glucose. With the ten tubes containing each 5 c.c. of the reagent and one-tenth of the 23.75 c.c. of urine, that is, 2.37 c.c. in each tube, the tube in which there is complete reduction evidently corresponds to 1 per cent. of glucose. If this diluted urine came from tube No. 4 of the first set, that is, the tube in which the urine had been diluted with three parts water, then we know that the figure 4 represents the percentage of glucose in the urine. A colored plate shows the two sets of tubes, the markings, etc., so that the whole technic can be seen at a glance. The urine keeps well under the liquid petrolatum so that the tubes can be examined and reexamined at leisure.

Brazil-Medico, Rio de Janeiro

March 2, 1918, **32**, No. 9

88 *Acute Case of Brazilian Trypanosomiasis. E. Villela.—p. 65.
89 Eugregarina Parasite of Brazilian Arthropods. III. C. F. Pinto.—p. 65.
90 *Leishmaniosis of the Nose. C. de Rezende.—p. 66.

88. **Chagas' Disease in Brazil.**—Villela reports the first acute case of this trypanosomiasis in the state of S. Paulo

in Brazil; it is the third case known in which skin lesions formed part of the clinical picture. The beetle known to be the host of the *Trypanosoma cruzi* was found in a certain locality in the state, and he then examined the inhabitants and found this acute case of Chagas' disease, with multiple skin lesions, in a child of 16 months. All the three generations in the family showed goiters, and this child had the aspect of myxedema, slight fever and enlarged glands, spleen and liver.

90. **Destructive Leishmaniosis.**—The illustration shows the destruction of the nose and nasal fossas by the leishman process. The patient was a boy of 16 and the trouble had commenced eight months before like a pimple on the nostril. Under local treatment with tartar emetic it healed promptly and completely, and the boy now breathes normally through his nose notwithstanding the loss of the septum. The results were equally favorable in three other cases, all healing under local treatment alone. De Rezende combines the drug with substances that penetrate deep into the tissues and others which form a varnish so that the application sticks and hardens, not requiring any dressing. His formula is 0.2 gm. each of arsenic trioxid, copper sulphate, methylene blue and of methyl violet; 0.5 gm. quinin; 0.75 gm. tartar emetic; and 1 gm. each of camphor, menthol, phenol and antipyrin, the whole forming a salve which is applied with a cotton-wound toothpick two or three times a week. In less than a month the lesion had completely healed in the severe case illustrated.

Medicina Ibera, Madrid

March 7, 1918, **2**, No. 18

91 Chronic Psychosis with Hyperthyroidism. F. Sanz.—p. 287.
92 *Photographic Record of the Pulse. G. Casares.—p. 289.
93 Tuberculosis of the Testicles and Heliotherapy. J. Esquivel.—p. 290.
94 Treatment of Severe Acne. Sicilia.—p. 294.

March 14, 1918, **2**, No. 19

95 *Beriberi in Spain. F. F. Martinez.—p. 313.
96 Auscultation in Early Diagnosis of Pulmonary Tuberculosis. G. Triviño.—p. 315.
97 Placenta Praevia. J. Botella y Montoya.—p. 318.
98 *Physiotherapy for Gastric Ulcer. S. Carro.—p. 320.

92. **Photographic Record of the Pulse.**—Casares gets a photographic record of the oscillations of the fluid in a small U manometer containing water, alcohol, acetone or ether. He calls the apparatus for the purpose a palograph and the tracings palograms, from the Greek word *palos,* to "palpitate." This palography reproduces, he says, the movements of the heart, of arteries and veins, with a detail hitherto unattainable. No further details are given.

95. **Beriberi in Spain.**—Martinez has discovered in Spain cases of amebic dysentery, kala-azar in children and cutaneous leishmaniosis, and now he reports a case of *beriberi*—none were imported cases. The beriberi case was in a fisherman of Granada who was admitted to the hospital with the diagnosis of polyneuritis, but the symptoms on the part of the heart, the cachexia and the absence of malaria, alcohol and syphilis in the antecedents led to the assumption of beriberi, a year after the first symptoms had appeared. Under repose, nourishing diet, avoiding fish, rice, potatoes and the other dishes to which he was accustomed, and a tonic, with massage, the symptoms gradually subsided to a complete recovery in time.

98. **Diathermy in Treatment of Gastric Ulcer.**—Carro extols the efficacy of diathermy in treatment of ulcerative or inflammatory processes anywhere in the digestive tract and especially for gastric ulcer. In three cases of gastric ulcer described, the lesion had not been modified by the usual courses of treatment, but the improvement under the thermo-penetration was pronounced. In all the gastric ulcer was of several years' standing. Hyperchlorhydria is the rule with gastric ulcer, and this keeps the ulcer from healing. Anything tending to promote secretion of gastric juice is contraindicated with gastric ulcer. The diathermy also benefited materially a man of 54 with dysenteriform ulcerative colitis of ten years' standing. The improvement was most gratifying, the stools losing their diarrheic character and the pains becoming much attenuated. Carro gave from eight to twenty sittings in the gastric ulcer cases. He begins with 1 or 1.5 amperes and never goes over 2.5. The sittings are given daily, twenty or thirty minutes long.

Revista dos Cursos, Fac. de Med., Porto Alegre

1917, **3**, No. 3

99 Lumbar Syndrome from Wound of Spinal Cord. F. Barros.—p. 5.
100 *Four Primary Infections with Syphilis. C. Wallau.—p. 9.
101 *Operative Removal of Foreign Bodies. C. Wallau.—p. 13.
102 The Pituitary Body F. Esposel.—p. 28.
103 Alkaptonuria. G. Blessmann.—p. 50.
104 Antirabies Service. G. Vianna.—p. 64.
105 The Lines in the Parietal Bone. F. da Fonseca.—p. 69.

100. **Reinfection with Syphilis.**—Wallau's patient is a man of 30 who beginning in 1906 has had four primary lesions in turn, at intervals of seven years and about one year. In the course of these experiences he has been given a total of 7.5 gm. of arsphenamin (salvarsan), and 944 gm. mercury by inunction, besides twenty intramuscular injections of mercury. He has been in good health free from symptoms during the last two years.

101. **Foreign Bodies.**—Wallau emphasizes the necessity for not trusting to the patient's statements as to sensations, etc., with a foreign body. In one case a man insisted that the set of false teeth he had swallowed could be felt in the stomach, but the organ was empty when opened. Under chloroform the man vomited profusely, and thus expelled the set which had been impacted in the esophagus. In times of epidemics an unsuspected foreign body may be mistaken for the prevailing disease, as in the case of a child with supposed diphtheria symptoms until a scrap of wood was found sticking in the throat. In his three cases of myiasis of the nose, one of the patients succumbed to meningitis; in the other two the larvæ were washed out in time with weak solutions of mercuric chlorid and creolin. In two other cases a glass tumbler was removed from the rectum. One tumbler was 7.5 cm. tall by 7.5 in diameter at the top; the other tumbler was 9 cm. tall by 6 in diameter. Both were removed whole. In a recent case of supposed cancer of the vagina, a fragment from a pessary used for a short time years before proved the cause of all the disturbances.

Revista de Medicina y Cirugia Practicas, Madrid

Feb. 7, 1918, **118**, No. 1493

106 Indications in Appendicitis. J. Blanc y Fortacin.—p. 129.

March 7, 1918, **118**, *No. 1497*

107 *Experiences with Spinal Anesthesia. J. Blanc y Fortacin.—p. 257.
108 *Unusual Conditions in Hernias. J. Blanc y Fortacin.—p. 264.

107. **Spinal Anesthesia.**—Blanc has found the anesthesia available in from three to ten minutes after injection of the anesthetic into the spinal canal; the sensation of contact is retained. The anesthesia was a success for operations on the legs but, for herniotomies, sometimes a few whiffs of cloroform were necessary in addition. In his 200 cases of intraspinal anesthesia there were serious mishaps only in two cases. In one of these by mistake the assistant had made the solution with 0.12 gm. of novocain, and syncope followed, requiring artificial respiration under which the patient promptly recovered. In the other case the patient was an elderly man with impassible stenosis of the urethra, and the operation was for retrograde catheterization. The operation was brief but there was some cyanosis afterward and coma followed in an hour with death in another hour.

The anesthesia lasts about two hours and there is sometimes headache, but it is very slight and brief. There is often a febrile reaction, evidently from aseptic irritation of the meninges as the spinal fluid looks turbid the next day and there is polynucleosis, but all returns to normal by the third or fourth day. Vomiting and paresis were never observed. He operated above the umbilicus only in one case, on an echinococcus cyst in the liver, and the operation was a smooth success. The anesthetic used was generally 6 cg. each of stovain, glucose and 1 per thousand epinephrin in 1 c.c. of physiologic serum. Of late he has been using cocain and epinephrin.

108. **Unusual Features of Hernias.**—When the cecum is sessile on and adherent to a hernial sac containing the appendix, Blanc warns that there are likely to be vessels at this point on which the cecum depends for more or less of its nourishment, and hence a plastic operation is usually necessary, through a second incision in the abdomen above. In two of his cases the hernial sac was formed of a diverticulum in the bladder. The nature of the hernia was not suspected until the hernial sac was incised and the pink color of its lining attracted attention. In both cases the diverticulum was surrounded and concealed by masses of fat. He excised the diverticulum in one case and inverted it in the other. In many cases, traction on the hernial sac pulled the bladder down into view. In one case a direct hernia had caused no trouble as it was kept under control by a truss. Then suddenly it increased in size and distended the scrotum but was not painful. With the diagnosis of hydrocele superposed on the congenital hernia, he incised the supposed hydrocele and found it an *echinococcus* cyst.

Revista Sud-Am. de Endocrinologia, Buenos Aires

March, 1918, **1**, No. 3

109 Oil Extract of Corpus Luteum in Treatment of Sterility and as Stimulant during Pregnancy. G. Giacobini.—p. 71.

Mededeelingen van den Burg. Geneesk. Dienst, Batavia

1917, No. 1

110 *Biologic Processes in Tropical Soils. P. A. A. F. Eijken and G. Grijns.—p. 1.

1917, No. 2

111 Tuberculosis in Java. C. D. de Langen and J. Schut.—p. 1.
112 *Tuberculosis in Uncivilized Tribes. J. Schut.—p. 3.

110. **Biologic Processes in Tropical Soils.**—These bulky volumes are issued by the Civilian Medical Service of the Dutch West Indies. They are published in the Netherlands language and in English, in parallel columns. This number of 150 pages is devoted to questions relating to the disposal of night soil and sewage in tropical conditions. The biologic processes occur with greater intensity in tropical soil, so that large quantities of organic matter are rapidly decomposed in a small space, with destruction even of intestinal bacteria. Hence, it is said, the closed septic tank offers peculiar advantages on this account in tropical countries, with oxidizing beds for the effluent.

112. **Tuberculosis in Virgin Soil.**—Schut reviews what is known to date in regard to pulmonary tuberculosis among savage tribes and natives of remote districts where the disease finds virgin soil. In the East Indies tuberculosis is rare, while other diseases giving a positive response to the skin tuberculin tests are common, and in the natives the response is nearly always negative with frank tuberculosis. Consequently, the Pirquet test is not reliable in the diagnosis of tuberculosis among the natives. He ascribes the higher mortality from tuberculosis—when such exists—among the native East Indians to the low resisting power from the climate, conditions of life and endemic diseases. There is no need to invoke a "virgin soil theory" to explain why tuberculosis runs a particularly acute and dangerous course in them.

Norsk Magazin for Lægevidenskaben, Christiania

April, 1918, **79**, No. 4

113 *Constitutional Hypersusceptibility and Asthma. A. de Besche.—p. 377.
114 *Rhinogenous Optic Neuritis. B. Malling.—p. 414.
115 *Acute Bulbar Paralysis. L. Nicolaysen.—p. 428.
116 Electrocardiography in Diagnosis. N. B. Koppang.—p. 433.

113. **Constitutional Hypersensitiveness and Asthma.**—De Besche reports the case of a physician of 30 who developed an alarming condition for an hour or so after a preventive injection of diphtheria antitoxin. This was a year or so before attention had been called to the danger of symptoms suggesting anaphylactic shock with injection of antitoxin when there is constitutional hypersensitiveness to horse serum and horse emanations. The physician knew that, from childhood, when he had anything to do with horses symptoms resembling those of hay-fever developed, with asthma. De Besche has made a special study of this idiosyncrasy to horses, and reports the details of eleven cases and one in which the idiosyncrasy was to cats. In eighteen other cases of asthma, no connection with horses or other animals could be detected. An idiosyncrasy of this kind can be rendered evident by touching the skin of a horse with the finger and then placing the finger on the conjunctiva of the patient's eyeball. In all cases of horse asthma, pronounced redness, lacrimation and slight edema follow, and sometimes sneezing. There is no appreciable reaction in the absence of this idiosyncrasy. The reaction is also instructive but is less constant when a drop of the horse serum is applied to a scarified area, as for vaccination against smallpox. A blister forms. He remarks that it might be advisable to apply these eyeball and scarification tests before injecting antitoxin in persons subject to asthma or hay-fever, and thus be able to exclude an idiosyncrasy. In his total twelve cases of horse asthma, in some the idiosyncrasy was to horses alone; in others also to cows, dogs and goats. Two had also hay-fever, and a tendency to hay-fever or asthma was common in other members of the family in several cases. In some of the horse-asthma cases the manifestations of the idiosyncrasy were accompanied by abdominal pain and vomiting or diarrhea. The physician first mentioned had a severe attack of the horse asthma once after dinner on a day when there had not been any known connection with horses. But the precipitin test, applied to the sausages from which he had eaten, revealed horse meat in them. One of the horse-asthma patients developed typical attacks also after eating strawberries. De Besche mentions that the attacks in his cases were exactly like those described by Willey, Bacon and Wright in The Journal, 1908-1909.

114. **Rhinogenous Retrobulbar Optic Neuritis.**—Malling reviews thirty-seven publications bearing on this subject and describes a case from his own experience in which a previously healthy woman of 40 developed a highly febrile diseased condition in the nose and left ear, confining her to bed for some time. A polyp had been removed from the nose just before. Two or three months later vision became impaired, and by the sixth month there were signs of beginning atrophy of the optic nerve. Nothing was found to suggest any other cause than the nose-ear trouble. Under potassium iodid, vision improved somewhat, but it was still only 6/18 in the right and 6/60 in the left eye. The ethmoidal cells then were found extremely pathologic and they were cleared out. Improvement was prompt and pronounced, vision in a few days increasing from 6/12 to 6/6 and from 6/24 to 6/12 while the scotoma disappeared and the blind spot returned to normal. The only pathologic findings in this case were the chronic ethmoidal sinusitis. The retrobulbar optic neuritis and secondary atrophy were characteristic of the rhinogenous type of eye disease, especially in the fluctuating course. The scotoma was always most pronounced in the early morning, possibly because the nose drained better when the patient was up and about. It was noticed further that the scotoma was much less pronounced when the flow of mucopus from the nose was freest. Even if the patient proves later to have had incipient multiple sclerosis as the explanation of her retrobulbar neuritis, the search for and cure of her sinusitis rendered conditions for vision much more favorable.

115. **Acute Bulbar Paralysis.**—A man of 62 had been previously healthy except for occasional migraine. Then he had an attack of dizziness and vomiting for nearly two days but there was no headache or other symptoms. The next day he found he could not swallow. The whole act of swallowing was paralyzed. He learned to feed himself through a stomach tube and after several months a faint tendency to return of the ability to swallow is now evident. Electric treatment had been patiently applied but had not seemed to benefit.

Ugeskrift for Læger, Copenhagen

April 4, 1918, **80**, No. 14

117 Blunders in Diagnosis of Pregnancy. H. Wulff.—p. 547.
118 *The Chemical Reactions of Poisonous Safety-Match Boxes. J. Christiansen.—p. 555.

118. See Abstract 114, p. 1344.

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THE ORGANIZATION OF THE MEDICAL PROFESSION FOR WAR

PRESIDENTIAL ADDRESS *

ARTHUR DEAN BEVAN, M.D.
CHICAGO

I feel greatly honored by the election to the position of President of the American Medical Association. I recognize not only the honor but also the responsibility of assuming the leadership of the organized medical profession of the country at this time. The war has made unusual and exacting demands on us. The government and the people are looking to us to furnish in this great emergency not only the necessary number of medical men for the Army and Navy, but also the highest degree of medical service and efficiency. This is proving to be a war not simply between well organized armies but between efficiently organized nations. It is now clear that in order to win the war we must organize the entire nation in such a way that every man and every woman must become a useful part of a great and powerful national military machine. No part of such a great national organization is more important than the medical profession, and on this, the opening evening of this great war meeting of American physicians, it is my purpose to address you on the organization of the medical profession for war.

ORGANIZATION OF THE ASSOCIATION

There are in the United States more than 145,000 men and women licensed in the various states to practice medicine. Of these more than 81,000 are members of the American Medical Association, and more than 45,000 are Fellows. The American Medical Association is organized along the most democratic and representative lines. No profession in this or in any other country is more thoroughly and efficiently organized than the American Medical Association. The unit of the organization is the county medical society. It is the avowed purpose of the county society to receive into its membership all reputable practitioners who are legally qualified to practice medicine. The county medical society is a democratic organization. It is not, nor is it intended to be, a select and exclusive medical society. Its functions are educational and social. It exists for the purpose of using the united efforts of the physicians of that county for the benefit of the people and for the education of its members. Any county society that is not democratic and representative is not fulfilling its proper function. By virtue of membership in the county society the physician becomes a member of his state medical society and of the national society — the American Medical Association.

During the first half century of its existence, the American Medical Association was a rather loosely organized body. It was founded for the special purpose of elevating the standards of medical education and practice. Its ideals were high, and it accomplished a great deal of good. Not, however, until its reorganization in 1901 on broad democratic and representative lines, did it become in fact the organized medical profession of the country. The American Medical Association is not sectarian, but is broad enough to include in its membership all licensed physicians who honorably practice scientific medicine.

ACTIVITIES OF THE ASSOCIATION

Since its reorganization, the American Medical Association has had a record of splendid achievement. It has succeeded in elevating the standards of medical education in this country, which had been uneven and unsatisfactory, to a position where they are as high as those in any other country. It has improved the character of medical instruction until we can now state without fear of contradiction that the medical student can obtain as thorough and complete an education here in America as anywhere in the world.

Moreover, the American Medical Association has accomplished much through its Council on Medical Education in cooperation with The Journal. Through these departments it has been of great service in creating a register of licensed practitioners. A register of medical students is now kept so that the Association possesses a full record of the medical career of each licensed practitioner and medical student.

The American Medical Association and its constituent state medical associations have succeeded in securing improvements in the medical practice acts of most of our states protecting the people against ignorant and inefficient practitioners and securing better public health service.

The American Medical Association has through its Council on Pharmacy and Chemistry done outstanding, pioneer work against the unscientific and unnecessary use of drugs and against the prescribing of secret formulas and "quack" medicines. It has done more than any other medical organization to place drug therapy on a sound and scientific basis.

The Journal of the American Medical Association has become the largest and most influential medical periodical in the world. It has a circulation of more than 65,000 copies, and in the best sense it is the instrument that keeps the profession in touch with the affairs of the Association, with scientific medicine, and through well-prepared abstracts with the current medical literature of the world.

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* President's address before the American Medical Association at the Sixty-Ninth Annual Session, Chicago, June, 1918.

It is now more important than ever that these admirable activities of the Association should be continued and amplified, and that steps should be taken to meet the new problems that will confront the Association after the war. These will undoubtedly include the stimulation of medical research, the development of an adequate American medical literature, the creation of postgraduate medical facilities not only for our own medical men, but also for the medical men from other countries, who will find here in our great democracy a welcome and opportunities in medical instruction and medical research second to none. But these things can and must wait on the one great problem that confronts us now, *the winning of the war.*

DEMANDS MADE BY THE WAR

The problem that confronts the country in this war, as far as the development of the medical departments of the United States Army, Navy and Public Health Service are concerned, can briefly be stated in this way: If we raise an army of 3,000,000 men, 10 per cent. of this number will be in the medical department; that is, 300,000 officers and men, and of these at least 25,000 must be qualified physicians and surgeons. If we raise an army of 5,000,000 men, the medical department will contain 500,000 officers and men, and it will be necessary to have between 35,000 and 40,000 qualified medical men. At present there are more than 200,000 men authorized in the Medical Department of the Army. Of these, somewhere from 20,000 to 25,000 will be medical officers, and the balance enlisted men and nurses. If we create a navy of 500,000 we shall need 3,500 medical men. If we create a navy of a million, which is probable, we shall need 7,000 medical men. The need of the Public Health Service, although more modest, will be considerable, and must be met. No one can prophesy the extent or duration of the war, but we can say with certainty that it is the purpose of the American people to create and maintain the largest and most efficient navy in the world and to organize and train and equip an army large enough to win the war.

WHO REPRESENTS THE MEDICAL PROFESSION?

The efficient organization of the medical profession of this country for war is being splendidly accomplished by the cooperation between the Medical Departments of the Army and Navy and the organized profession, the American Medical Association. It has been unfortunate that a medical advisory committee which is not in any way representative or democratic, and which has no proper function in the efficient organization of the medical profession for war, should have been called into existence. A small coterie of specialists, of gynecologists and surgeons, no matter how eminent or how successful they may have been as promoters and exploiters of special medical societies, can in no way in this great emergency and in this great democracy represent the medical profession.

RESPONSE OF THE PROFESSION

At the outbreak of the war, the American Medical Association offered to the United States government its entire organization and machinery to assist in the enormous expansion that became necessary. Through the officers of the county societies, the state societies, and particularly through the columns of THE JOURNAL, the needs of the government were placed before the organized profession of the country, and they responded splendidly to the call. So far 25,000 have gone into the Medical Departments of the Army and Navy. No other profession or calling has responded more promptly to the needs of the country than the medical profession. The great bulk of the medical men who have gone into the government services were members of the American Medical Association.

The demands made on the medical profession by the war are so great that it is evident that in order to secure the necessary number of medical men for the government, and at the same time prevent hardships in some communities and institutions, it is necessary to organize the entire profession of the country in a systematic way. It therefore became necessary for the American Medical Association, acting with the Surgeon-General's Office, to take a census of the available medical men in the United States in each state, in each county, in each medical school and in each hospital, and to attempt to secure from each one of these different units at least 20 per cent. of the medical men. This plan will enable the government to secure the necessary number of medical officers for an army of 5,000,000 men or more, and a navy of 1,000,000 without any great hardship to any community or to any institution. It is evident that a plan of this kind is absolutely essential, and it is the purpose of the American Medical Association through its county and state societies and its national organization to create such a systematic classification and secure the adoption of this plan. Such a plan means a voluntary draft of the medical profession by the profession itself. The medical profession will supply the men needed by the government. No conscription, no compulsion will be required.

THE HONOR ROLL

The survey has been completed, and was published in THE JOURNAL, June 1. It gives the honor roll of the men who have already gone into the service from each county and state society. It gives the number of men under 45 and under 55 years of age in each county and the percentage of men who have volunteered. Up to this date about 15 per cent. of the total number of men have volunteered. The Surgeon-General of the Army has called for 5,000 more medical officers, and the Surgeon-General of the Navy needs about 2,000. It becomes necessary for us to raise the total number of medical officers this year to about 30,000, which means nearly 22 per cent. of the medical men of the country.

As President of the Association, I desire to call the serious consideration of each county medical society to the fact that in order to do its duty it should furnish at least 20 per cent. of its members for military service. This situation should be met fully and promptly by each county medical society. In order to prevent hardships to communities due to lack of medical service, and in order to prevent the crippling of medical schools and hospitals, no community and no institution, unless it is clearly oversupplied, should be allowed to furnish more than 50 per cent. of its medical men. As far as possible the quota from each county should be filled by men under 45 years of age. If this is not possible, men up to 55 will be taken. As fast as each county fills its quota of 20 per cent.—and this should be done by each county within the next few months—the secretary of the county medical society should notify the secretary of the state medical association and the secretary of the American Medical Association of that fact.

THE SUPPLY OF MEDICAL MEN

Profiting by the experience of the great nations that entered the war in 1914, the medical profession of the country, and the government, have very wisely taken steps to prevent the disruption of our medical schools, and I am glad to say that our national government adopted the suggestion made by the Surgeon-General to allow medical students to be commissioned in the enlisted Medical Reserve Corps and have them detailed to complete their medical education and to serve a year in a hospital as interns before they are called into active service. This was to apply to the men who have already studied medicine in the medical school proper for one year. In order to insure the further supply of medical students to meet the demands of a great and prolonged war, the effort is being made to have this apply also to the men who are taking their premedical work in universities. It is necessary to have these men continue their medical studies in order to insure the continued supply and the necessary number of medical men.

The United States is the only great reservoir of medical men in the world. The medical professions of Great Britain and France, of Italy and Belgium, and this is probably more true of enemy countries, have been well nigh exhausted by this war. They delayed making plans for a continued supply, their medical schools became disrupted, and they are already suffering for medical men in their armies and in their civil life. Major Horace B. Arnold, chairman of the Council on Medical Education, who is on active duty in the Surgeon-General's Office looking after the problem on medical education for General Gorgas, has this matter now under consideration, and it is to be hoped that he will succeed in securing rulings that will enable our premedical students to continue their medical courses. If the need for medical men becomes very great we can adopt a continuous session and graduate men in three years. The senior students in the medical schools should have special courses in military surgery. I would recommend that if possible one or two competent medical officers be assigned to each medical school for this purpose.

EXPANSION OF THE MEDICAL DEPARTMENT

The enormous problem that was presented to the Surgeon-General's Office by the war may be realized in a striking way by the statement that the development of an adequate medical department for 3,000,000 men means that less than 2 per cent. of such a department is represented by the men in the service at the time of the outbreak of the war — that more than 98 per cent. of the men must be taken from civil life, and must be given the necessary military training to fit them for active duty in the field. This enormous problem is being adequately and splendidly met. A small medical department which existed before the war has formed the leaven necessary to change a great body of physicians coming from civil life into efficient military surgeons and efficient hospital and ambulance units. Special training camps for medical men were formed at Fort Riley, Fort Benjamin Harrison and Fort Oglethorpe. Gradually the work done by these different camps is being concentrated at Fort Oglethorpe, where an enormous military medical university of 40,000 officers and men is being created. Here the enlisted men will receive their necessary training in small and large units, and the medical officers will receive their necessary military instruction and instruction in such medical work as will peculiarly fit them for their military duties.

GENERAL GORGAS

Standing out prominently in the development of the great Medical Department of the Army is a great figure, the figure of Surgeon-General Gorgas, who in a very quiet way has demonstrated again the fact that he is one of the greatest organizers in sanitation and in military medicine and surgery. It is most fortunate that in this emergency work of the medical department it was found in such strong and capable hands. General Gorgas is one of the great assets of this country today. The splendid work that he is doing he should continue to do throughout the war, and the organized profession of this country could do no greater service to the government than to make clear to the Washington authorities that they are unanimous in their support of Surgeon-General Gorgas, and regard him as the best man in the country for the head of the Medical Department of the Army.

General Gorgas has succeeded in surrounding himself with the strongest, most efficient men, and has shown great wisdom and judgment in placing specially qualified men at the heads of the many departments under his control. The men he has chosen from the regular corps as the heads of divisions are strong and efficient: it is only necessary to mention such men as Welch, Vaughan, Billings, Mayo, de Schweinitz and scores of others, who in civil life are the recognized leaders in their special field of work, recognized not only in this country but throughout the world.

We are equally fortunate in finding the Medical Department of the Navy in the efficient hands of Admiral Braisted, who has succeeded in meeting the great expansion made necessary by the war in the most satisfactory way.

The medical profession is also proud of the splendid service that has been rendered by the Public Health Service under the able leadership of Surgeon-General Blue.

HEALTH DURING MOBILIZATION

The mobilization of this country for war is an enormous task. To create an army of from three to five million men or more, where before we had less than 100,000, and create a navy of from 500,000 to 1,000,000 is an undertaking that had never before been worked out by any country. It was necessary that this enormous mobilization should be done as rapidly as possible, and from the rapidity and the enormous size of the mobilization it was inevitable that the medical organization could not accomplish the impossible and secure at once ideal results. Yet when we compare the mobilization of the United States for war with other countries we find cause for congratulation. Up to the time of our mobilization the army of Japan had held the record for the lowest mortality of any country during mobilization, and the best care of its soldiers from a medical standpoint. In the Japanese mobilization there was a mortality of 20 per thousand. In our mobilization there has been a little less than 10 per thousand. In other words, the showing of our mobilization from the standpoint of mortality was twice as good as the record held by any country up to that time. There have been epidemics of contagious diseases, such as measles, mumps and meningitis, and the total number of cases occurring among 2,000,000 men has been somewhat startling; but when these facts are analyzed and it is found that the mortality in our army is less than the mortality in civil life of the same number of men of the same age, picked by insurance companies, we can realize what splendid results have been accomplished.

The people of this country, the mothers and fathers and wives, whose sons and husbands are in the Army and Navy, are entitled to know, and it will be a great comfort to them to know, that the health of these men is better looked out for than when they were in civil life, that the dangers that they run from disease are less than when they were in civil life, and that when they are sick or wounded they will receive as good care, as high a class of medical and surgical service, as could possibly be obtained in civil life. This is true because our best men have gone into the medical service, and the government is providing the medical departments with every facility necessary to give our soldiers the best medical care.

THE VENEREAL PROBLEM

Strikingly successful has been the handling of the venereal problem. A careful examination of the evidence shows that venereal disease is only about half as frequent in men after they enter the Army as in similar groups of individuals in civil life. Certainly no army has ever been mobilized which has been as clean morally and free from venereal disease as the present American Army. Associated with this fact and responsible in large part for the splendid showing made is the elimination in large part of drink from the Army. Certainly no army has ever been mobilized that has been as free from drinking as the American Army. It was fortunate that our mobilization occurred at a time when the amount of drinking in this country was rapidly diminishing, and at a time when most of our states were going on a prohibition basis. Special efforts have been made by the government in the way of laws that have been enacted for this purpose to prevent drinking in Army posts and in territory immediately contiguous to them. This leads me to a consideration of the problem of drinking and prohibition as a purely medical problem.

NECESSITY OF ELIMINATING DRINK

As we analyze the facts in a scientific and medical way there can be no doubt of the injurious effects of alcoholic drinks on both the physical and the mental well-being of our population. There can be no doubt that the greatest single factor that we can control in the interests of the public health of the nation would be the elimination of alcoholic drink.

In the slow evolution of civilization, many great wrongs persisted for centuries because people had become so accustomed to them that they were accepted as matters of course. They became so intrenched that it required either centuries of education or a revolution to extirpate or right them. Great epidemics and plagues were accepted as inevitable and as visitations of God. Government by autocratic power and divine right without the consent of the governed has been tolerated. Slavery with its horrors was defended. The unequal rights of women went unquestioned. Among these great wrongs too long tolerated, none has done more injury to mankind than drink. Events now are moving rapidly in the convulsions of a world war. Women have demanded and will obtain, as they deserve the world over, their equal rights. The course of events is writing the death warrant of autocracy and rule by divine right; and science and education should eliminate not only the plagues and epidemics but also the curse of drink from the world.

I want to plead for the united action of the organized medical profession of this country to secure protection by law against the injury that drink is doing to our people, not as a political measure, but as the most important public health measure that could be secured. In this crisis when we and our allies are fighting not only for ourselves but also for humanity and civilization, we must organize the entire nation in the most efficient possible way, and this cannot be done without eliminating drink. Each member of the medical profession as an individual, each county medical society, each state medical society should take an active part in the propaganda against drink, and secure national prohibition, not years from now but now when it is so badly needed and will accomplish so much good, not only for our boys in khaki and in blue, but for the nation in arms. And when it has once been done away with, it could no more be resurrected after the war than could slavery.

THE NURSES

One of the serious problems now confronting us is the securing of the necessary number of women nurses for our Army and Navy hospitals. We shall need from 25,000 to 40,000 women nurses. These cannot be secured from the trained and registered nurses of the country and leave a sufficient number of nurses to care for our civilian population. It requires three years of training in times of peace to educate a nurse. But we must remember that in peace times it requires a four years' training at West Point and Annapolis to make an officer of the Army or Navy. In the emergency of this war we are developing splendid officers from well educated, capable men taken from civil life, by intensive short three months' courses in our officers' training camps. The same plan should be adopted in securing the necessary nurses.

There are thousands of well educated, capable young women in this country who are not only willing but are anxious to offer their services to the country. Nurses' training camps and training schools can be developed in our Army and Navy cantonments where, with an intensive three months' training, these young women can be developed into most useful war nurses, and meet the needs of the government. The Surgeon-General of the Army has already taken steps to encourage these nurses' training schools.

RECONSTRUCTION AND REEDUCATION

Another great problem confronting us is the reconstruction and reeducation of our wounded coming back from the war. Our allies after four years of war, bringing with it hundreds of thousands of cripples, have demonstrated what great good can be accomplished by reconstruction and reeducation. The injured man is reeducated to do some useful work. He is not allowed to drift as a useless wreck, a burden to himself and the community. He is recalled to life by a process of training and reeducation that enables him to earn his livelihood, to occupy his mind and to make life — even with a handicapped body — worth living. Surgeon-General Gorgas has been fortunate in securing as the head of this important reconstruction work our own Dr., now Colonel, Frank Billings, who will have the earnest support of thousands of men and women throughout the country in making this work successful.

DRUGS AND CHEMICALS

An organized effort should be made by the medical profession of the country to secure the creation and maintenance of industries for the production in this country of the necessary drugs and chemicals, surgical instruments and appliances, making this country independent in productions of this kind from other countries of the world. The securing of such legislation by the national government as will protect by proper tariff these industries in the process of development is essential. With the 145,000 medical men in this country, with the population and wealth of this country, we are the largest market in the world for drugs, instruments and medical appliances. By proper legislation, industries could be developed so that these products could be made here as cheaply as anywhere in the world, in such quantities as not only to supply our own market but also to enable us to enter other markets and maintain commercially our position in the western hemisphere, especially in this country and in South America.

HEALTH OF THE CIVIL POPULATION

One matter which the profession should not lose sight of in endeavoring to meet the great demands made by war is the health of our civil population. The importance of maintaining and increasing and making more effective a national Public Health Service with wide authority, of developing in each county and each state strong public health departments, cannot be questioned. We should demand such state and national organizations for public health and preventive medicine that will secure for our people in a much better way than at present the great possibilities of modern preventive medicine. The war makes this matter not less but more important.

ONE HUNDRED PER CENT. LOYALTY

In organizing the medical profession of this country for war there is one fundamental and basic condition that must be secured: We as a profession must go into this war not only efficient, but we must go into it 100 per cent. loyal, 100 per cent. American. We are at war with a barbarous and brutal autocracy. The American people did not want to enter the war. It was only after the Imperial German Government had murdered our people and destroyed our property and treated our repeated protests with contempt that we prepared to defend ourselves against Germany, as an individual must against a murderer, a highwayman, a thief. We are at war with Germany and Austria. The Germans and Austrians who have chosen to make this country their home must choose between the land of their birth and America, the land in which their children are born. The choice with most of them has not been difficult. They have chosen their new home, the birthplace of their children, and these men and women we accept gladly as loyal Americans. But there are a few who are disloyal and would give aid and comfort to the enemy, and these must be sought out and interned where they can do no harm. It is the duty of every medical man and each county medical society to assist the government in securing the arrest and internment of every disloyal member of the medical profession.

There are in this country some German medical societies, and attention of the government authorities should be called to these. They should be disbanded at once. We should not permit, now, or in the future, in this country any organizations that further German propaganda. The world has had its lesson with this monstrous thing.

THE INTERNATIONAL FELLOWSHIP OF SCIENCE

The American medical profession as a whole is more familiar with Germany and the German and Austrian people than is any other class of our countrymen. Thousands of our medical men have studied abroad in the clinics and laboratories of Great Britain and France, of Germany and Austria, of Switzerland and Italy. No other class of people in the world has felt more fully the international brotherhood of science than have American medical men. They have regarded scientific knowledge and scientific discoveries as the property not of one nation but of the world. They have accepted the great discoveries, such as Jenner's of vaccination, the American discovery of anesthesia, the work of Pasteur the great Frenchman, the work of Lister the great Englishman, the work of Koch the the great German, the German discovery of the roentgen ray, the French discovery of radium, the American discovery of the manner of transmission and means of preventing the spread of yellow fever and typhus. They have accepted these and rejoiced that these great discoveries belonged not to one nation or one people, but were contributions to the great international science of medicine. What effect has the war had on this international fellowship of science?

OUR ATTITUDE TOWARD THE GERMAN MEDICAL PROFESSION

I believe we owe it as a duty to ourselves and to the German medical profession to state clearly the feelings and position of the American medical profession toward them. We can never again hold out to them the right hand of the fellowship of science until the German people drive from power and punish as they deserve the brutal and barbarous autocratic government which is responsible for this war, and has created in Germany a government of the people, by the people and for the people. No matter what doubt or confusion there may have been at the outbreak of the war as to the guilt of the German government, the responsibility is today fixed and definite. The refusal to attempt a peaceful settlement before hostilities began, the outrage of Belgium, the invasion of France, the breaking of all international law, the sinking of the *Lusitania*, the evidence and revelations of the long prepared and worldwide plot of Germany to dominate Europe and the world by force of arms, the evidence furnished by the German ambassador to England, Prince Licknowsky, the deliberate attempt of the German government while we were still at peace with Germany to embroil us in war with Mexico and Japan, the murder of Edith Cavell, the use of poisonous gases, the bombing of unfortified towns and cities, the acquiescence in the massacre of the Armenians by their Turkish allies, have all written with the indelible pencil of truth the history of German guilt.

No matter what sophistries the German people may advance as excuses for these things and for their precipitating war on Belgium, France, England and Russia, we know that these cannot apply to America. We know that there is not a shadow of excuse for their making war on the American people. It required repeated outrages to convince the American people that the German government was a thing without honor, that we were face to face with a highly organized and efficient autocracy which recognizes no law but the law of the jungle, an autocracy and a people who would rob their neighbors of their fair fields and their factories, their iron mines and their oil wells, an autocracy and a people who combine the frightfulness and moralities of the Hun with science and efficiency of the twentieth century, an autocracy and a people that have been seized with the insane egotism that they are God's chosen instruments to civilize and "kultur" the world, not by education and science, but with the mailed fist and the sword.

To medical men who are accustomed to study diseased bodies and minds, this state of mind of the German government and the German people seems like the insanity of a whole nation. We medical men are familiar with a horrible disease, which begins with an initial lesion acquired in a debauch and which ends often in insanity with delusions of grandeur and magnificence. It would seem as though the German nation was suffering from such a disease, from such a form of insanity. It acquired its initial lesion in the rape and outrage of Denmark, of Austria and of France in the decade between 1860 and 1870. The virus of conquest and domination has coursed through its veins for more than fifty years, and has produced now a diseased national mind with the delusions of egotism and grandeur that are responsible for this world's war.

When the German people waken from the nightmare of the war, they must realize the enormity of the crime they have committed under the spell of the medieval autocratic government that controlled them. They will realize that although they might retain with profit to themselves a province stolen from Denmark or Poland, France or Belgium, they can never dominate with force of arms with profit to themselves for any length of time great nations like Russia and France, England, Italy, Japan and America. We are in this war, as our great President has said, "to make the world safe for democracy;" and whether it takes one year or ten years, we shall continue the war until the brutal and barbarous autocracy of Germany is destroyed. If the German people could have but a brief period of freedom from their war madness, let them ask themselves if the few miles of Belgium and France and the occupied provinces of stricken Russia can compensate them for making nine tenths of the world their bitter enemy. And they should be made to know that this is not the enmity of a day, the enmity that will disappear with a peace that they hope to compel by force of arms, but that it is an enmity that will last, that will mean for Germany a complete severance of relations, social, commercial and in every way from ourselves and our allies until Germany has purged itself of guilt, and asks humbly for a place among the nations in which the people rule. The medical profession of America sends this message to the medical profession of Germany.

OUR SINGLE PURPOSE AS A NATION

To the medical professions of Belgium and France, of England and Italy, of Russia and Greece, of Portugal, Roumania, China and Japan, of Brazil and the Central American Republics, to our colleagues in Canada and Australia and New Zealand and South Africa, and to the other nations who in response to German outrages have joined in war against her, we send a message to hold fast and be of good cheer. We have been a peace loving people, we loathe war, we have done everything a nation could in honor do to avoid war, but our people have been murdered by the German government and the German people, and we protested and they murdered more, and we protested and they murdered more, and we have been forcd to defend ourselves and our rights. We have not been a military nation. We have been unprepared for a great war. But we have absolute confidence in the ultimate success of our democratic form of government. We believe that it is not only the best form of government in peace, but that it can be made the most efficient and best organized form of government in a great war. Let us tell our medical colleagues in the nations who are now our allies that America with its more than hundred million free men and women is organizing itself into a great military machine, that all our people, that all our resources, that everything we have is being converted as fast as brains and energy and money can convert them into a weapon with which to win this war, which is now our war. Let us tell them to hold fast and be of good cheer, for America is coming.

America asks nothing for herself. She comes with a clear conscience, a sane national mind, a stout heart and a strong arm. She comes with the single purpose of a united people, a hundred million strong, to punish the murderers of her people and to win this war for civilization and humanity.

Let us send from this meeting of the organized medical profession of America to our great leader in Washington a message, the message that wells up from every farm and factory, from every town and hamlet, the message that echoes and reechoes through our country, from the mountains through the valleys to the sea, the message that is sent by every man and woman of America when our government calls for their services in this war:

We hear the call of our country. We answer, we are here.

THE EFFECT OF TYRAMIN ON CIRCULATORY FAILURE

DURING INFECTIONS AND DURING OR AFTER OPERATIONS *

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The action of tyramin[1] on the normal circulation of man has been considered in a previous paper.[2] After the subcutaneous injection of a full therapeutic dose (from 60 to 80 mg.), the systolic blood pressure usually rises to levels of from 150 to 200 mm. The pressure begins to rise within five minutes after the injection, attains its maximum in about ten minutes, and subsides more gradually to its previous level, which is usually reached in from fifteen to thirty minutes. The diastolic pressure frequently rises also, but never to any great extent. The volume pulse in the arm becomes larger and more sustained. The heart rate becomes somewhat slower, and extrasystoles occasionally occur. These circulatory changes, except for being more prolonged, resemble those which follow the intravenous injection of epinephrin in moderate doses. Subcutaneous injections of epinephrin, on the other hand, rarely cause any marked rise of systolic

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[1] "Tyramin" is the short term for "tyramin hydrochlorid."

[2] Hewlett, A. W.: The Action of Tyramin on the Circulation of Man, Arch. Int. Med., March, 1918, p. 411.

pressure and not infrequently lower the diastolic pressure.

Despite the fact that tyramin injections consistently raise the systolic blood pressure of man, we find in the literature but few instances in which they have been used clinically for the purpose of combating a failing blood pressure. Hoyt[3] recorded one case of advanced tuberculosis with marked circulatory weakness in which the systolic pressure was raised from 85 to 130 mm. by the injection of 40 mg. of tyramin. Clark[4] injected tyramin on two occasions into a patient showing collapse after an operation for a ruptured gastric ulcer, and after each injection the systolic pressure showed a transient rise, from 60 to 72 mm., without, however, preventing a fatal termination. In a second patient, showing collapse after hemorrhage from septic wounds, Clark raised the systolic pressure for a short time from 100 to 112 mm. The patient died some days later.

In the present paper we wish to place on record additional observations on the effects produced by the subcutaneous injection of tyramin during the circulatory failure of infectious diseases as well as during that which may occur during or after operations. A few attempts to abort asthmatic paroxysms with this drug will also be reported.

TYRAMIN IN THE CIRCULATORY FAILURE OF INFECTIONS

In the following cases of infection the patients showed a serious circulatory failure previous to the administration of the drug. Such failure is characterized by a rapid, small and poorly sustained pulse and by a subnormal blood pressure.

Case 1 (Hospital No. 58260).—In a patient, aged 69, with double lobar pneumonia 40 mg. of tyramin were injected at 1:30 p. m., Sept. 19, 1917, without appreciable effect on the pulse or the blood pressure. At 4 p. m. a second injection of 80 mg. was given. Ten minutes later the systolic pressure had risen from 100 to 110, the diastolic pressure was still 58, and the pulse had increased from 85 to 100, the pulse feeling a little fuller. Twenty-five minutes after the injection the circulatory condition had returned to its previous state. The patient died early on the following morning.

Case 2 (Hospital No. 58632).—In a patient, aged 57, with lobar pneumonia complicated by malaria, the blood pressure at 1 p. m. was 85 systolic and 60 diastolic, and the pulse was 140 per minute and barely perceptible. Five minutes after the injection of 80 mg. of tyramin, the pressures were 110 systolic and 60 diastolic, and the pulse was 145 and somewhat more easily felt. Fifteen minutes after the injection the blood pressure and pulse had returned to the original condition. At 2 p. m. the pulse could not be felt, nor could the blood pressure be read. The injection of 80 mg. of tyramin at this time did not produce any evident change. The patient died half an hour later.

Case 3 (Hospital No. 60120).—In a patient, aged 28, with typhoid fever, Nov. 20, 1917, the blood pressure was 85 systolic and 65 diastolic, and the pulse was 120. Sixty mg. of tyramin were injected. Five minutes later the blood pressure had risen to a maximum of 115 systolic and 70 diastolic, and twenty minutes later it was 100 systolic and 70 diastolic. November 21, the patient became cyanotic, the pulse was imperceptible, and the blood pressure could not be recorded. Three minutes after the injection of 60 mg. of tyramin, the pulse could be easily felt, and the blood pressures were 95 systolic and 65 diastolic. Half an hour later the pulse was still palpable. The improvement in the patient's general condition following this injection was very striking and was commented on by the attendant nurses. November 22, the blood pressures were 80 systolic and 60 diastolic; the pulse was 126 and very small. Four and ten minutes after the injection of 60 mg. of tyramin the blood pressure was 100 systolic and 60 diastolic, and the pulse was larger. Twenty-five minutes after the injection the pressure was again 80 systolic and 60 diastolic. The patient died, November 23.

Case 4 (Hospital No. 60216).—A man, aged 38, with typhoid fever, was unconscious when admitted to the hospital, and the pulse could not be felt. Five minutes after the injection of 60 mg. of tyramin the pulse could be counted, 150 per minute. It remained palpable for about an hour, when it again became imperceptible. A second injection of 60 mg. had the same effect as the first. During the following thirty-six hours the drug was given whenever the patient became pulseless, usually at intervals of one to one and a half hours. Up to the last two hours before the patient's death, each injection was followed by a return of the pulse and some improvement in the general condition. The last one or two injections, however, produced no effect.

From these observations it is evident that in the circulatory failure which may complicate infections, the subcutaneous injection of tyramin causes at times a transient rise of blood pressure and an increase in the size of the pulse. These effects were neither so marked nor so constant in the circulatory failure of infections as they were when the drug was injected into individuals with normal circulations (compare with the results, recorded by Hewlett[2]). Furthermore, the drug was often ineffective shortly before the death of the patient. Occasionally, as in the second injection given in Case 3, the change in the circulation was accompanied by an evident improvement in the general condition of the patient. The effects of the drug, however, were transitory, and in our cases the final outcome was not influenced. Indeed, it is to be expected that when the underlying cause of the circulatory failure is progressive in character, no drug which merely corrects this manifestation is likely to save the patient. At the same time it is conceivable that under exceptional circumstances the temporary improvement in the circulation might prove of decisive value in enabling the patient to overcome the infection.

TYRAMIN IN THE CIRCULATORY FAILURE DURING AND AFTER OPERATIONS

Case 5 (Hospital No. 59183).—A man, aged 30, after the resection of a rib for pyopneumothorax following lobar pneumonia, became cyanotic and pulseless. Sixty mg. of tyramin were injected. In five minutes the pulse had become palpable and in ten minutes it was full, rapid and of fair tension. The patient's general condition was strikingly improved. Forty-five minutes later, when the pulse was again becoming smaller, a second injection of 60 mg. was given, and again the condition of the pulse improved. Thereafter it remained rapid but of fair size, and the patient eventually recovered. Dr. Philip Gilman, who had operated on this patient, expressed the opinion that the tyramin had saved him from a seemingly fatal collapse.

Case 6 (Hospital No. 58232).—In a woman, aged 38, following a hysterectomy for fibroids and secondary anemia, the pulse became almost imperceptible. About five minutes after the injection of 60 mg. of tyramin, the pulse became full and of good tension. The patient complained of cardiac palpitation. The pulse remained good, and the patient recovered.

Case 7 (Hospital No. 60847).—A woman, aged 45, was much emaciated and weak. A panhysterectomy was performed for tuberculosis of the ovaries and tubes. Midway in the operation the pulse became barely palpable, with a rate of 130 per minute. The systolic pressure was 60 mm. Three minutes after the injection of 60 mg. of tyramin, the pulse became distinctly palpable, fuller and somewhat slower

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[3] Hoyt, D. M.: The Therapeutic Application of P-hydroxyphenylethylamin (Tyramine), an Active Principle of Ergot, Am. Jour. Med. Sc., 1912, **144**, 76.

[4] Clark, A.: The Clinical Application of Ergotamine, Biochem. Jour., 1910-1911, 5, 236.

(120 per minute). The blood pressure rose to 100 systolic and 65 diastolic. The pulse remained palpable for about twenty-five minutes, at which time it became imperceptible and the blood pressure could not be determined. A second injection of 60 mg. caused the pulse to become palpable again. Ten minutes after the injection the pressure was 80 systolic and 55 diastolic, and twenty minutes after it was 60 systolic. Twenty-five minutes later the blood pressure could not be read. Owing to the serious condition of the patient, the operation was terminated. While Hogan's gelatin solution was being prepared, another 60 mg. of tyramin was injected. Within four minutes the blood pressure was 70 systolic and 55 diastolic, and the pulse could be counted, 150 per minute. Five hundred c.c. of Hogan's solution were then given intravenously, and the pulse remained palpable for an hour, the blood pressure being 55 systolic and 45 diastolic. The patient's condition gradually grew worse. Injections of 60 mg. of tyramin caused the pulse to reappear on several more occasions, but were ineffective during the last hour before death, which occurred eight hours after the patient had left the operating table.

Case 8 (Hospital No. 61230).—A patient, aged 22, following exploratory operation for cerebellar tumor, returned to the ward with a pulse that was barely palpable and 150 per minute. Sixty mg. of tyramin were injected subcutaneously. Within three minutes the pulse became fuller and slower (120 per minute). The blood pressure, which could not be read previously, was now 85 systolic and 55 diastolic. Thirty minutes later the pulse again became very small, and 500 c.c. of Hogan's solution were given intravenously. There was temporary improvement in the patient's condition. The pulse remained palpable for forty-five minutes, with a rate of 150 per minute. The blood pressure was 70 systolic and 50 diastolic. Death ensued two hours later.

Case 9 (Hospital No. 9469).—In a patient, aged 38, following a cholecystectomy, the pulse was barely palpable, and its rate was 160 per minute. The blood pressure was 100 systolic and 60 diastolic. The patient was cyanotic. Four minutes after the injection of 60 mg. of tyramin the pulse became fuller and of greater tension, the pressure being 130 systolic and 70 diastolic. Twenty minutes later it was 115 systolic and 65 diastolic, the pulse rate being 120. The pulse continued to be of good quality, and the patient recovered.

Case 10 (Hospital No. 9609).—A patient, aged 38, following the incision of multiple abscesses attended by considerable loss of blood, returned to the ward in a state of circulatory collapse. The pulse was scarcely felt and 150 per minute; the blood pressure was 95 systolic and 55 diastolic. Four minutes after the injection of tyramin, the pulse became easily palpable, with a rate of 120, and the blood pressure was 130 systolic and 65 diastolic. There was an evident improvement in the patient's condition which aroused enthusiastic comment from the attending intern. In ten minutes the blood pressures were 120 systolic and 65 diastolic, with a pulse rate of 120 per minute. The pulse remained easily palpable for half an hour, when it became less full and strong. Five hundred c.c. of Hogan's solution were then given intravenously with benefit. The patient recovered.

Case 11 (Hospital No. 61011).—A patient, aged 22, following an operation for the removal of an extensive neurofibromatous growth of the legs, returned to the ward in a condition of circulatory collapse. There was cold perspiration over the body. The pulse was barely perceptible and 160 per minute. The blood pressure was 50 systolic and 30 diastolic. Four minutes after the injection of 80 mg. of tyramin, the pulse became easily palpable and 130 per minute. The blood pressure rose to 95 systolic and 55 diastolic. Five minutes later it was 75 systolic and 55 diastolic. There was an evident improvement in the patient's general condition. One hour later the pulse had again become small, and the blood pressure had fallen to 65 systolic and 45 diastolic. A second injection of 80 mg. of tyramin was given, which again caused a distinct improvement in the general condition of the patient, and a rise of pressure to 95 systolic and 50 diastolic. The patient continued to improve, and recovered from this threatening circulatory collapse.

In these patients with circulatory failure during or after surgical operations the injection of tyramin usually caused a transient but marked improvement in the pulse, the blood pressure and the general condition. As in the circulatory failure of infectious diseases, the rise of blood pressure was less marked than that caused by the injection of tyramin into individuals with a normal circulation. The circulatory failure that occurs during or after operations differs from that complicating the infectious diseases in that the underlying cause is less often progressive. For this reason a temporary improvement of the circulation may lead to lasting results, and in Cases 5, 6, 9, 10 and 11 the immediate improvement caused by the drug was followed by ultimate recovery. It cannot be demonstrated that tyramin saved the life of any one of these patients, for we do not know what would have been the ultimate outcome had tyramin been omitted. Nevertheless the opinion prevailed among those who attended these patients that in Cases 5, 10 and 11 the outlook was unfavorable and that tyramin saved the life of one or more of them.

Of drugs ordinarily given in order to combat the circulatory failure that may supervene during or after operation, none have withstood the test of investigation by accurate methods. In therapeutic doses, strychnin appears to exert no influence on the circulation; in normal men, at least, caffein tends to lower the blood pressure; therapeutic doses of camphor have little if any action on the circulation, and subcutaneous injections of epinephrin usually fail to cause any rise in the mean blood pressure. Intravenous injections of epinephrin raise the blood pressure, but the effect is very transitory and difficult to control, and they have not been generally used. Most surgeons in treating this type of circulatory failure rely mainly on the application of heat externally and the addition of fluid to the body either by rectum, by hypodermoclysis, or by the intravenous injection of various solutions or of whole blood. Over most of these methods tyramin possesses the advantage of a simple technic and a rapid effect. The rise of pressure begins within five minutes and usually reaches its maximum in about ten minutes. It may be given while preparations are being made for intravenous therapy.

One possible danger from tyramin should be mentioned. Even in those with a normal circulation this drug may cause extrasystoles, and when extrasystoles are already present it may increase their number.[2] Since a rapid succession of ventricular extrasystoles may pass on into ventricular fibrillation, it is possible that tyramin, like intravenous injections of epinephrin, may occasionally cause a fatal ventricular fibrillation, particularly in those whose heart muscle is in an unusually irritable condition. For this reason the drug should not be administered when frequent extrasystoles are present. During chloroform anesthesia also the foregoing danger is increased, for we know that in animals chloroform in proper doses may provoke a fatal ventricular fibrillation, and it seems probable that the sudden cardiac deaths which occur occasionally during surgical operations under chloroform are due to this cause.

FAILURE OF TYRAMIN TO ABORT ASTHMATIC PAROXYSMS

It is well known that many asthmatic paroxysms may be aborted by the injection of epinephrin. Baehr and Pick[5] found in animal experiments that while epinephrin caused a dilatation of the bronchi, tyramin had the opposite effect. Despite this unfavorable experimental evidence, it seemed worth while to test the action of tyramin on paroxysms of asthma. As the following cases show, the drug has little, if any, beneficial effect under such circumstances.

Case 12.—A medical student, aged 24, had been frequently relieved by epinephrin in previous attacks of asthma. During an asthmatic seizure, 60 mg. of tyramin were injected subcutaneously. The blood pressure rose from 125 systolic and 70 diastolic to 190 systolic and 80 diastolic, but no relief was obtained from the dyspnea. One c.c. of epinephrin solution (1:1,000) was then administered subcutaneously, and the paroxysm subsided. As on previous occasions, however, the patient complained of tremulous sensations, palpitation of the heart, etc., symptoms which did not occur after the administration of tyramin.

Case 13 (Hospital No. 52993).—A patient, aged 37, during a severe attack of asthma was given 60 mg. of tyramin subcutaneously, with no effect on the symptoms. Before the injection the blood pressure was 140 systolic and 100 diastolic, with a pulse of 96 per minute. Five minutes after the injection, the blood pressure was 160 systolic and 110 diastolic, with a pulse of 100. One c.c. of epinephrin solution gave almost immediate relief. The patient complained of nervous sensations and cardiac palpitation, symptoms not experienced after the tyramin.

Case 14 (Hospital No. 56014).—A patient, aged 26, was admitted to the ward during an acute attack of asthma. Sixty mg. of tyramin were injected with no effect on the symptoms. Thirty minutes later 1 c.c. of epinephrin solution was injected which gave temporary relief. The attack was finally controlled by morphin and atropin.

Case 15 (Hospital No. 40930).—A patient, aged 35, suffering from a paroxysm of asthma, was given 60 mg. of tyramin subcutaneously. There was no relief from the symptoms. Epinephrin given twenty minutes later also failed to control the attack. The patient was relieved by atropin.

Case 16 (Hospital No. 39864).—A patient, aged 38, during an asthmatic attack was given 80 mg. of tyramin with no relief. Before the administration the blood pressure was 148 systolic and 80 diastolic, with a pulse of 80 per minute. Five minutes after the injection the blood pressure was 180 systolic and 100 diastolic, with a pulse of 78 per minute.

SUMMARY

1. In four patients who showed evidence of circulatory failure during the course of infectious disease, repeated injections of tyramin were given. These usually caused a transient rise of blood pressure and an increase in the size of the pulse. These effects were less marked than those produced when the drug was given in similar doses to those with a normal circulation. In none of our cases did a permanent improvement occur.

2. In seven patients who showed evidence of circulatory failure during or after operation, repeated injections of tyramin were given. These usually caused a transient rise of blood pressure and an increase in the size of the pulse. Striking improvements in the general condition of some of these patients occurred. Five of the seven patients recovered, and in three of these the drug benefited a condition which to those in attendance seemed desperate.

3. In five patients, tyramin failed to abort asthmatic paroxysms, although other drugs (epinephrin and atropin) were subsequently used with benefit.

A BACTERIAL TOXIN AS THE CAUSE OF RETINAL HEMORRHAGE

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In the summer of 1917, a case of retinal hemorrhage came under my observation which illuminated the heretofore obscure etiology of this condition. It made definite that which, in such conditions before, had been vague. It determined causes which could be corrected, and it made precise, measures of treatment which before had been speculative. Its importance, therefore, would seem to warrant a brief report with the deductions to which it gives rise. It is briefly as follows:

A woman in middle life had been having a series of recurrent hemorrhages in the retina for a period of eight months. During this time she had been under the advice and observation of an excellent internist and an ophthalmologist of international reputation. The treatment, therefore, might reasonably be accepted as fairly expressive of that which the best professional skill would approve. It consisted of elimination through the kidneys by saline cathartics and through the skin by baths. The hemorrhages continued to recur, however, and when she was examined, patches of blood were found scattered in the vicinity of the larger vessels, with a number of minute spots near the macula which had materially reduced the acuity of vision. As this is not a technical report of the case, the exact ocular details need not here be given. It was found, however, that she was only 46 years old, that she had no arteriosclerosis, and that her blood pressure was only 120 mm. of mercury, but that she had marked leukocytosis. She had no disease of the kidneys and was apparently, aside from the eyes, in excellent health.

Further inquiry elicited the fact that five years before she had an abscess of the antrum which had seemingly recovered. She was referred to a rhinologist, however, who opened the antrum and removed a quantity of bland, sterile pus. Pyorrhea was evident to the least critical observer, while roentgenograms revealed the presence of apical abscesses of several teeth with rarification of the alveolar tissue. The infected teeth were removed with aseptic precautions and a culture made by Dr. Thibaudeau, pathologist of the Children's Hospital, Buffalo, which showed that the active organism was the *Streptococcus hemolyticus.* The removal of the source of infection was followed by a cessation of the hemorrhages, although the destruction of retinal tissue had been so great that vision was not materially improved.

In a subsequent case of recurrent hemorrhage in a man, aged 70, with a blood pressure of 200, again an infected tooth was suspected after various other measures had been ineffectively used. Its evidence was verified, and again the active organism proved to be the *Streptococcus hemolyticus.* An autogenous vaccine was prepared and employed at intervals of four days for six weeks. Since that time, now about six months, there have been no further hemorrhages. In almost every case since in which hemorrhage of the eyeball has been present, some form of focal infection has been found, and the active organism has usually been some form of the streptococcus and almost invariably in recent examinations the *Streptococcus hemolyticus.*

Retinal hemorrhage is of much more frequent occurrence than it is generally supposed to be. It is not dependent on blood pressure. It may be associated with, but is not directly caused by, arteriosclerosis, albuminuria, diabetes or other diseases involving disturbed metabolism or focal infections. In any of these conditions, protein toxins may be given off. These are easily absorbed into the circulation, more especially when they arise from focal infections that are proximal to the eye. The organism which is most commonly present is the streptococcus, and the form frequently found is that of the *Streptococcus hemolyticus*. The hemorrhage thus produced is not the result of force from behind, but is due to softening of the tissues of the capillary or arterial walls by the local action of this toxin, thereby producing lysis.

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[5] Baehr, G., and Pick, E. P.: Pharmakologische Studien an der Bronchialmuskulatur der überlebenden Meerschweinchenlunge, Arch. f. exper. Path. u. Pharmakol., 1913, **74**, 41.

This conception has not heretofore been recognized as a cause of retinal hemorrhage, and the reasons for the conclusions reached will be briefly given. The importance of the subject will at once be evident, as in a proportion of cases, at least, a definite etiology and one which clarifies the entire situation will be established in place of one which is vague and speculative. It explains satisfactorily many pathologic changes otherwise obscure, and gives definite and specific methods of procedure which, if determined early enough, may have a preventive value, in conditions not only endangering sight but even life itself. That our fundamental knowledge of the cause of retinal hemorrhage is still exceedingly indefinite is shown in a review of our most recent literature. In an exhaustive article from the pen of Professor Eperon,[1] the conclusion reached is that while the causes given are arteriosclerosis, albuminuria, glycosuria and menopause, still, "it is somewhat misleading to regard hemorrhagic retinitis as a single clinical entity—it is a symptomatic condition which must be evaluated according to concomitant factors."

Dr. Clegg[2] has confessed that "he is quite at a loss to know the explanation of retinal hemorrhage in spite of all of the suggestions made in literature," and he believes especially that "the known methods of treatment are by no means reliable, nor is it even always at once evident which line of treatment will best suit an individual case." In one of the latest and most authoritative textbooks[3] it is accepted without further comment that "while most cases of retinal hemorrhage are due to arteriosclerosis, diabetes, chronic nephritis, etc., there are also a large number which have no discoverable cause." Parsons[4] makes no attempt to describe the conditions which produce retinal hemorrhage.

It is generally assumed by ophthalmologists that one or two conditions obtain or that the two at the same time may be present—either that the internal pressure becomes so great that it can no longer be resisted by the retaining wall of the blood vessel, which consequently ruptures, or that through change of structure the vessel wall becomes so weakened that the normal pressure can no longer be resisted. Little attention has been given, as to the manner in which these structural changes take place, or on what they are dependent. This is vitally important because on its understanding is based our whole conception of the actual etiology, and therefore prognosis and treatment. It is here urged that that which actually occurs is the absorption into the blood of a soluble protein poison, usually given off from a focal infection, which has a solvent effect on the intercellular cement substance of the cell wall, and that the hemorrhage is not due to alteration of the blood pressure but to local lysis in the wall itself. That this view is not that which is commonly entertained is evidenced by a writer[5] who, in urging the more general use of the sphygmomanometer, says that "while tuberculin is needed in many of these cases, in addition thereto means must be resorted to to reduce the blood pressure or to make it compensate." The editorial comment on this is: "While recurrent retinal hemorrhage may be accompanied by low blood pressure, as was pointed out by the late E. W. Stevens twelve years ago, its association with variations of coagulability of the blood should also be studied. It may occur with high coagulability as well as with low." This leads to the inevitable conclusion that neither the blood pressure nor the coagulability is the essential factor to be reckoned with, but that back of this is another element which has not yet been recognized.

Happily the investigations of Vaughan and Wheeler in 1903 in which they demonstrated that the colon bacillus contains a highly active poison was epoch making and vitally important in this connection. In their subsequent studies they isolated from other bacteria a toxic substance which came to be known as the "protein poison." When undigested proteins are introduced into the blood current, this virulent poison is set free, the body becomes sensitized, and death may result without bacteria entering into the active process. They are, however, the source from which the toxin is derived. The poison thus given off from a focal nidus is slowly absorbed, and disturbing local effects result.

The differential character of the toxins given off by the different strains of bacteria has not yet been studied. It is known, however, that several varieties produce hemorrhage. The effect is not unlike that of the snake venoms, which Flexner has shown contain a chemical substance having a definite endotheliotoxic action or a solvent effect on the intercellular substance. Wells considers it quite probable that of the chemical agencies causing hemorrhage the bacterial products are the most important:

> It is quite probable that the bacterial poisons that cause marked hemorrhagic manifestations likewise contain endotheliotoxins. . . . Hemorrhage in cachectic conditions is often ascribed to changes in the vessel walls due to malnutrition, but it is difficult to imagine capillary walls suffering from lack of nourishment even with the poorest of blood, and it seems more probable that the hemorrhages are due even in cachexia to chemical constituents of the blood that injure the endothelium.

As to changes of blood pressure, it will be remembered that so large is the capillary area as compared with that of the arterial system, and so great the friction of their walls as the blood stream passes through them, that even when the initial pressure is high it is reduced to the practically negligible force of between 20 and 30 mm. of mercury by the time that it reaches these terminals. Balanced, moreover, as it is by the ocular tension, a pressure rupture in a normal capillary must be impossible, as we do not have retinal hemorrhage with the high tension of glaucoma or in the greatly reduced tension of phthisis bulbi.

An added importance to the subject lies in our understanding not alone of hemorrhages within the eye but also of hemorrhages elsewhere in the body. It would seem very doubtful indeed if in cerebral apoplexy the vessel breaks because of the internal pressure from the blood; more likely, the protein poison, from whatever source it originates, has so affected the nutrition of the endothelium at that special point in the vessel's course that the normal elastic cellular substance, then replaced with calcareous or other mineral substances, is so softened that dissolution of the walls results and hemorrhage is precipitated. If, as would seem, this is what actually occurs, the recognition of this newer pathology will enable us to seek the origin of the focal nidus producing the poison, and by removing this stop the recurrence of this tragic disaster instead of wasting valuable time in eliminatives that can have no direct effect whatsover on the disease.

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[1] Summarized by a writer in the British Journal of Ophthalmology, 1917, **1**, 187.

[2] Clegg: Paper read before the Ophthalmological Society of the United Kingdom, May, 1916.

[3] Knapp, A. H.: Medical Ophthalmology, Philadelphia, P. Blakiston's Son & Co., 1917.

[4] Parsons: Pathology of the Eye, New York, G. P. Putnam's Sons.

[5] Am. Jour. Ophth., April, 1918, p. 289.

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ABNORMAL REFLEXES CAUSED BY MORPHIN POISONING IN A TABETIC

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The patient is a physician, aged 48, married. He is bedridden and undoubtedly has a well advanced case of tabes, in the paralytic stage. The diagnosis has been confirmed by serologic and spinal fluid examinations, both of which have been performed under the supervision of Major Joseph Collins at the Neurological Institute.

Mentally, the patient shows a pure acute depression. For a number of weeks prior to the taking of the overdose of morphin, he had been talking of committing suicide, lamenting his fate and the hopelessness of his condition. He cried a great deal, and was irritable and complaining. For several days before taking the morphin he had suffered from moderately severe laryngeal and cardiac crises, and also from root pains in both lower extremities. His memory was good and there was no mental deterioration. There was no expansiveness, no excitement other than the agitated depression, and there were no indications at any time of euphoric tendencies. Mentally and neurologically, there was nothing to suggest that the patient was a paretic.

As revealed by the general neurologic examination before the taking of morphin, all the cranial nerves were functionating properly. The fundi were normal. The pupils reacted very little to light, and were small and slightly irregular, but reacted well to accommodation. There was good consensual reaction. The patient was unable to stand except by the aid of a cane or by leaning on the arm of another, and could not walk without help. There was a decided equilibratory and nonequilibratory ataxia. The deep reflexes in the upper extremity were fairly active and equal, but the ankle and patellar reflexes had been absent. There had not been any Babinski reflex, and whatever response the great toe gave to stroking of the plantar surfaces had been very mildly flexor. There was no clonus. There was loss of power in the lower extremities and loss of tone. There was no atrophy and no tremor. There were several areas of anesthesia; and various paresthesias and dysenthesias had been found in both feet, particularly on the plantar surfaces. The speech showed no defect excepting that when the patient spoke moderately long, the voice became weak and thin with much complaint of dryness of the throat. The normal blood pressure ranged between 120 and 130 with no diastolic record, except on one occasion taken about two weeks before the incident under discussion, when it had been 120 systolic and 80 diastolic. The heart and lungs were normal, and the peripheral and retinal blood vessels had been singularly free from arteriosclerotic changes. There was incontinence of feces and urine, which was of about eight months' duration.

About 5 p. m., March 23, 1918, the patient took surreptitiously eight ¼ grain tablets of morphin. In about an hour he was unconscious, cyanotic, dyspneic and apparently dangerously ill. The physician found him breathing stertorously and irregularly, with face, lips and hands cold and blue. The heart rate went from 140 to 176 within a half hour, but did not become intermittent until the more rapid rate had been reached. Later, the breathing was characteristic of the Cheyne-Stokes type. The pulse was small and weak, and the physician judged that the blood pressure was extremely low, although it was not taken. The patient was in coma and could not be aroused. He was immediately stimulated and the general condition improved somewhat, although the coma continued as profound as before. The attending physician watched the case and studied the clinical symptoms with no idea whatever that morphin had been taken and was really the cause of the symptoms. There is no record of the reflexes during this period.

I examined the patient at his home about 8 o'clock that evening. He was breathing quietly but regularly. Occasionally there was a pause of from four to ten seconds without respiration, and the average rate was from eight to ten per minute. He was neither livid nor pale. The head was turned to the left and remained continuously in that position. If the head was placed straight, within a few minutes it would resume the position described above, although it did not seem to be pulled in that direction. The patient was in a condition of extreme muscular relaxation. There was a marked muscular flaccidity in the trunk, in all four extremities and in the neck, which could not be entirely accounted for by tabes.

All the cranial nerves appeared to be functionating properly. There was no demonstrable central or peripheral type of facial palsy, although it appeared to two of us that possibly the left side of the face was flatter than the right. However, as I had not seen the patient for a long time, I did not pay much attention to this symptom. The pupils measured about 2.5 mm., and reacted poorly to light; accommodation could not be tested, the patient being in coma. The consensual reaction was absent on repeated testing. The reflexes in the upper extremity were fairly active and equal. The patellar, ankle and dorsocuboidal reflexes were absent. The abdominal reflexes were peculiarly inconstant. At the first examination of the evening, it was almost impossible to get more than a very slight flicker from the abdominals on the left side; later, these became very active; the reflexes on the right side could not be obtained. Still later, all the superficial reflexes except the lower right abdominals were active. Most surprising was the definite presence of a well marked Babinski response on the right side which was demonstrated time and again, and which was produced at each stimulation at least eight or nine times. On the left side we obtained a doubtful Babinski response on three or four occasions. The Oppenheim reflex on the left side was surely present; on the right side, this abnormal reflex, together with a Chaddock and Shaffer reflex, was present. No Gordon reflex could be elicited on either side. There was also present at each application of the test a Klippel-Weil reflex on the right side only. Here, too, there was present the pronation sign of Strümpell. The sign of Marie-Foix was absent. The patient's muscles were extremely flaccid. There were twitchings and convulsive movements of the legs and right upper extremity. The rest of the neurologic examination was negative. The heart beat was 136 and regular. There was brachycardia. The blood pressure was 80 systolic, and the diastolic pressure could not be obtained. A few hours later, the blood pressure had fallen to 75 systolic. The face was not suffused or cyanotic, and the breathing was not stertorous. The skin was warm and dry, the temperature 97.

At the consultation that followed, several conditions were thought of. We did not dream of any toxicosis from morphin, and after considerable discussion, it was agreed that we had to deal with a cerebral hemorrhage. We felt that the patient was at the point of death, and I called attention to the fact that blood pressures were prone to take a sudden drop before death in cases of cerebral hemorrhage. The abnormal reflexes decided the diagnosis, particularly as I reasoned that the pyramidal tract irritation must be great in order to produce clinical evidence of such a pathologic condition in an advanced tabetic. I was mystified by the presence of the Babinski and Klippel-Weil reflexes, particularly in view of the hypotonia and the absence of deep tendon reflexes in the lower extremities.

The subsequent history of the case was very gratifying. Despite the fact that it was considered unwise to use stimulants of any kind and that nothing at all was done for the patient except to leave him alone, in five or six hours he began to regain consciousness, and in twenty-four hours had entirely recovered from his coma.

At an examination made two days later, all the superficial and deep reflexes were as they had been before the ingestion of the morphin, and the abnormal reflexes mentioned had disappeared. The consensual reaction had also returned. We were informed by the patient at this examination of the deliberate attempt to take his life.

COMMENT

An investigation of the effect of morphin on the nervous system reveals that most authorities agree that the spinal reflexes are increased by morphin, both by moderate and toxic doses. The same authorities also agree that cerebral inhibitions of various types are increased by the depressant action of morphin on the brain. It has occurred to me that a combination of these two physiologic actions of morphin may be offered as an explanation for the phenomena observed in this patient.

Hare[1] says:

> The action of opium upon man and the lower animals varies with the degree of intelligence or cerebral development. It quiets the brain and excites the spinal cord.

Sollmann[2] agrees that:

> The reflexes and the spinal functions are mainly stimulated.

Wood[3] says:

> There is considerable physiological evidence that in frogs, at least, presumably in other animals, there is located in the optic lobes a center known as Selschenow's center, whose function is to control reflex activity, and stimulation of which diminishes reflexes. It would appear plausible that morphin in small doses excites this center so that the spinal activities would be lessened and that the large dose stimulates the ganglia in the gray matter of the spinal cord, perhaps also paralyzing the inhibitory center at the same time, thus producing marked increase of reflexes and even convulsions.

Some such physiologic action as has just been described must be called in to help us explain the phenomena observed in the patient. There must of necessity be posited the presence of a physiologic action characterized by removal of cerebral inhibition over the control of reflexes. The effect of such removal of cerebral inhibition would be to allow the drug a free hand in exciting the inherent reflexes existing in the spinal cord. Such a combined action would give us an explanation for the phenomena observed here.

It will be recalled that the Babinski phenomenon and allied abnormal reflexes, including the Klippel-Weil (in the hand), have been explained on the ground of loss or diminution of the control exerted by the corticospinal or pyramidal tracts on reflex movements. The pyramidal functions are inhibitory of voluntary and reflex movements. Phylogenetically, the pyramidal tracts are of late acquisition, and their removal, therefore, or diminution of their function for any reason would allow an older mechanism to work unhampered. Such a mechanism is found in the spinal cord reflexes which, it seems agreed, morphin excites.

CONCLUSION

A report of this case is possibly of importance in throwing some light on the physiologic action of morphin on the brain and spinal cord, particularly as it relates to the reflexes. The conception of morphin as a cerebral depressant and spinal stimulant seems to be borne out in some degree by this case.

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[1] Hare, H. A.: A Text-Book of Practical Therapeutics, Ed. 15, 1914, p. 383.

[2] Sollmann, Torald: A Manual of Pharmacology and Its Applications to Therapeutics and Toxicology, 1917, p. 217.

[3] Wood, H. C., Jr.: Pharmacology and Therapeutics, Ed. 2, 1916, p. 122.

SIMPLE METHODS FOR PROLONGING THE VIABILITY OF MENINGOCOCCUS CULTURES *

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The old problem of maintaining stock cultures of meningococci presented itself in our laboratory during the past year. An unusual demand for reliable control cultures has developed in connection with the detection of meningitic carriers in Army cantonments and naval training stations. The maintenance of a large number of cultures for preparing highly polyvalent antimeningitis serum has been a perennial problem of the manufacturer. The transportation of meningitis cultures presents especial difficulties. Cultures brought to this coast from New York on several occasions were sent by special messenger and, while they were on the way, fresh subplants were made at Denver, yet only a small proportion arrived safely. Another case of interest was observed in Dr. Wollstein's[1] work on parameningococci. A hurried journey was made to Paris by Dr. Louise Pearce to secure two cultures from Dr. Dopter, "since it was found that the cultures sent by post did not survive the journey."

The uncertainty of maintaining cultures on blood agar, starch agar, and sheep serum glucose agar slants led to an attempt to find a simple, stable medium in which the organisms might be kept alive with less difficulty. This has been accomplished by the use of various deep mediums, especially beef brain.

Many mediums have been devised for the cultivation of meningococci, on which they may remain alive a short while, or survive through several generations, and then suddenly die out, even with frequent transplanting. The question of viability presents a separate problem from that of artificial cultivation. With this in mind, Vedder's[2] suggestion as to the use of starch agar was taken up, but this necessitated frequent transplanting. Although gonococci and meningococci possess many similarities, this medium, which is suitable for the former, was not highly successful for meningococci. A modification was adopted, namely, the addition of 5 per cent. defibrinated rabbit blood, and in place of slant cultures, stab cultures, 6 cm. in depth, were made with some success. Roos[3] has devised a potato extract blood agar which in our work has maintained the cultures quite satisfactorily. Eastwood,[4] Griffith[5] and Scott[6] made cultures of isolated colonies of meningococci on solidified egg. As no formula was given, simple egg slants, solidified in the Arnold sterilizer, have been used in experimental work. One feature of this medium mentioned by Griffith is the viability of cultures for many weeks, and growth after seven months in the incubator at 22 C. This work has not been repeated in detail in these experiments, but the undoubted value of egg medium protected from evaporation has been determined at 37 C.

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* From the Department of Bacteriology, University of California.

[1] Wollstein: Parameningococcus and Its Antiserum, Jour. Exper. Med., 1914, **20**, 201.

[2] Vedder: Starch Agar, a Useful Culture Medium, Jour. Infect. Dis., 1915, **16**, 385.

[3] Roos: Culture Media for Maintaining Stock Cultures of the Meningococcus, Jour. Bacteriol., 1917, **1**, 67.

[4] Eastwood: Meningococcus Carriers, Jour. Hyg., London, 1915-1917, **15**, 405.

[5] Griffith: Identification of the Meningococcus in the Nasopharynx, Jour. Hyg., London, 1915-1917, **15**, 446.

[6] Scott: A Study of Meningococci, Jour. Hyg., London, 1915-1917, **15**, 464.

I was led to test the viability of meningococci in sterile brain by the apparent affinity of these organisms for nervous tissue. While the experiments were in progress, a suggestion was made by Dr. F. P. Gay as to the value of chopped beef or liver prepared and sterilized in the same manner as brain medium. Some work has already been done with these two substances, and results show that the fundamental principle necessary for growth and viability is not contained alone in brain. The observations of Wherry and Oliver[7] on the adaptation to reduced oxygen tensions shown by gonococci and other bacteria, followed by the work of Cohen and Markle[8] on meningococci in partial tension cultures, lead us to conclude that the depth of these mediums has an important bearing on the viability of cultures both at 37 C. and at room temperature. It may well be also that the matter of moisture retention is equally important.

TABLE 1.—VIABILITY OF MENINGOCOCCUS CULTURES IN DAYS AT 37 C.

Medium	Date Planted	Remarks	Cultures									
			1* 296a†		10* 296b†		30* 296c†		44* 297a†		60* 297b†	
			Alive	Dead	Alive	Dead	Alive	Dead	Alive	Dead	Alive	Dead
A Deep brain	Nov. 16, 1917	Cotton plug until Feb. 1, then rubber cap	148	174	171	175	175	183	183	189	175	183
B Deep blood, 5 c.c. only	Nov. 23, 1917	Paraffin plug until Feb. 1, then rubber cap	50	68	124	141	141	176	68	75	102	124
Deep brain	Nov. 27, 1917	Rubber cap	181	...	161	...	81	92	46	57	181	...
Deep brain	Dec. 12, 1917	Paraffin plug	166	...	78	105	78	105	42	57	122	163
C Deep brain	Dec. 23, 1917	Rubber cap	138	149	138	149	138	149	156	...	156	...
Deep blood	Dec. 23, 1917	Rubber cap	149	153	94	111	85	94	111	138	100	111
Roos medium slants, 20% blood	Dec. 22, 1917	Rubber cap	156	...	156	...	156	...	156	...	149	152
Roos medium slants, 5% blood	Dec. 24, 1917	Rubber cap	111	142	156	...	100	111	152	156	111	142
Vedder's modified, stab, 5% blood	Dec. 25, 1917	Rubber cap	65	91	55	65	...	...	156	...	160	111
Eastwood; egg; slants	Dec. 23, 1917	Rubber cap	94	111	94	111	55	67	94	111	111	142
Deep brain	Dec. 31, 1917	Rubber cap	103	134	147	...	147	...	147	...	147	...
D Deep beef	Feb. 5, 1918	Rubber cap	111	...	67	93	111	...	111	...	111	...
E Deep liver	Feb. 19, 1918	Rubber cap	97	...	97	...	97	...	...	...	97	...

* Rockefeller number † University of California number.

TABLE 2.—VIABILITY OF MENINGOCOCCUS CULTURES IN DAYS AT 37 C., ROOM TEMPERATURE, AND ICEBOX TEMPERATURE

Medium	Date Planted	Temperature	Cultures									
			1* 296a†		10* 296b†		30* 296c†		44* 297a†		60* 297b†	
			Alive	Dead	Alive	Dead	Alive	Dead	Alive	Dead	Alive	Dead
Deep brain	Jan. 21, 1918	37 C.	122	...	122	...	122	...	122	...	122	...
Deep brain	Jan. 21, 1918	22 C.	22	36	65	82	82	90	16	22	16	22
Deep brain	Jan. 21, 1918	6-8 C.	22	36	...	...	22	36	22	36	22	36

* Rockefeller number. † University of California number.

In the experiments under consideration, five cultures, obtained by the Cutter Biological Laboratory of Berkeley from the Rockefeller Institute, were used. All are characteristic gram-negative diplococci, fermenting glucose and maltose in Dunham's peptone solution containing 5 per cent. rabbit serum. A polyvalent serum procured from Dr. J. G. Fitzgerald of Toronto agglutinated all the cultures in one hour at 37 C. in 1 c.c. of a dilution of serum of 1:10, with 1 c.c. of a suspension of organisms in phenolated saline. At the end of twenty-four hours at 8 C., all were agglutinated in a serum dilution of 1:100, with 1 c. c. of the organisms in suspension. The controls, containing 2 c.c. of phenolated saline with the organisms in suspension, remained unagglutinated.

Certain preliminary experiments were made to determine the viability of the meningococcus in brain and blood mediums, the results of which are shown in A and B of Table 1. The success of these led to comparative studies of deep brain, blood, and other recommended mediums, as shown in C of Table 1.

It is of interest to note in connection with the use of blood that Davis[9] made some special tests with defibrinated blood from normal persons and meningitic patients to determine its bactericidal effect. He found that the organisms lived in some normal bloods and not in others. He noted also that cerebrospinal fluid acted much like serum. Results of the tests with normal blood serum indicated that the organisms were dead from one to two hours after their preparation.

The deep brain medium, according to von Hibler,[10] is thus prepared: Beef brain is chopped fine, and one-third the volume of distilled water is added. The mixture is tubed in lots of from 12 to 15 c.c. and sterilized, preferably in the Arnold sterilizer, three successive days. Before we plant into this medium, it is customary in our work to transfer a loop of brain to agar medium and incubate twenty-four hours to detect any contamination.

In addition to deep brain, a deep blood medium was also used. Blood is obtained aseptically from rabbits by heart puncture, defibrinated and tubed in lots of from 12 to 15 c.c. The latter medium has been used by Miss Winegarden of the Cutter Laboratory, with considerable success, in keeping cultures over a long period. Deep blood is equally valuable, according to Miss Winegarden, for the preservation of pneumococcus and gonococcus cultures.

In the preliminary tests, the inoculated brain and blood mediums were placed in the incubator at 37 C., and subcultures were made at the end of twenty-four hours on agar slants containing 0.5 c.c. of defibrinated rabbit's blood. Following incubation of the slants,

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[7] Wherry and Oliver: Adaptation to Certain Tensions of Oxygen as Shown by Gonococcus and other Bacteria, Jour. Infect. Dis., 1916, 19, 288.

[8] Cohen, M. B., and Markle, Louis: A Method Which Greatly Facilitates the Culture of the Meningococcus, The Journal A. M. A., Oct. 28, 1916, p. 1302.

[9] Davis: Studies in Meningococcus Infection, Jour. Infect. Dis., 1905, 2, 602.

[10] Von Hibler: Untersuchungen über pathogene Anaeroben, 1908, p. 85.

Gram's stains were made to confirm the purity of the cultures. At intervals the tests were repeated until the brain and blood (unfortunately in the preliminary test about 2 cm. in depth) were comparatively dried out. Feb. 1, 1918, broth warmed to 37 C. was added aseptically to the fast-drying mediums. The brain was restored to its original bulk. The blood, however, did not lend itself readily to suspension in the liquid. At this time rubber test-tube caps were placed on the tubes. Where pure subplants still develop, characteristic gram-negative diplococci are present. In all subsequent tests for growth and purity from other mediums, the same technic has been followed, except that precautions to avoid evaporation have obviated the necessity of restoring lost moisture.

Paraffin plugs were employed, but these are unsatisfactory. With constant use, the plugs became smooth and may slip down into the culture. They are also inconvenient to handle. Rubber stoppers were tried, but the opportunity for contamination was increased; both types, therefore, were discarded in favor of rubber test-tube caps, which are proving highly satisfactory. They last reasonably long, on exposure in the incubator; and, in comparison with paraffin, prevent evaporation very effectively.

It is of interest to note that successful subplants were made from relatively dry blood and brain mediums; but the results were rather irregular.

To obtain cultures for serologic work, it is preferable to subplant from the brain medium on to blood agar slants, incubate twenty-four hours, and subplant from these slants to fresh blood agar to secure suspensions of organisms free from brain.

So far, the brain and blood mediums compare favorably; but the ease of preparation rests with the former. When a large number of organisms are kept in stock, the taking of blood in quantities becomes a problem.

At the present time, cultures are being kept on several mediums, as shown in C of Table 1. From time to time, tests are being carried on to determine the viability and purity of the cultures kept at 37 C., and covered with rubber test-tube caps. The work has not as yet been concluded, but serves to point out the value of mediums recommended. In order to verify the original test on brain, we have prepared several sets of the organisms at various dates, the results of which are recorded in Table 1.

In the transportation of meningococcus cultures, it is highly desirable that viability be maintained at ordinary temperatures. Notwithstanding the remarkable resistance of the closely related gonococcus to low temperatures, as recorded by Lumière and Chevrotier,[11] it has been generally agreed and specifically proved by Flexner,[12] Elser and Huntoon,[13] and others that viability of meningococci at temperatures lower than 37 C. is very limited. Flexner's[14] more recent article emphasizes the same point of view.

That deep brain cultures remain alive for many days at lower temperatures, as shown in Table 2, is therefore highly important. There can be no doubt, however, from the tests, so far as they have gone, that even in deep brain cultures the meningococcus is of longer life at 37 C. than at room or at icebox temperature.

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[11] Lumière and Chevrotier: Sur la résistance du gonocoque aux basses temperature, Compt. rend. Acad. d. sc., 1914, **158**, 139.

[12] Flexner, Simon: Biology of Diplococcus Intracellularis, Jour. Exper. Med., 1907, **9**, 105.

[13] Elser and Huntoon: Studies on Meningitis, Jour. Med. Research, 1909, **20**, 377.

[14] Flexner, Simon: Mode of Infection, Means of Prevention, and Specific Treatment of Epidemic Meningitis, Rockefeller Inst. for Med. Research, 1917.

EPIDEMIC OF GERMAN MEASLES IN A CITY ADJACENT TO AN ARMY CANTONMENT

AND ITS PROBABLE RELATION THERETO

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Much comment has been heard on the prevalence of measles in Army cantonments. German measles as a factor in disease incidence in troops has been more or less overlooked, with probably serious results. It is common knowledge that in the moving of troops, in the present selective draft and in the concentration of the National Guard for reasssembling to proper training stations and to complete permanent organizations, certain epidemiologic features of diseases prevalent among them have been overlooked along with the prescribed methods of interstate quarantine. As a result, diseases like measles and German measles have occurred in Army cantonments and have in many instances produced an increase and even caused epidemics of these diseases in adjacent cities. The absolute necessity for proper diagnosis and differentiation of the infectious diseases, particularly measles and German measles, if only for control, was evidently at first disregarded.

THE OUTBREAK

Beginning in October, 1917, local physicians reported a type of measles, later diagnosed as German measles, in North Little Rock, Ark., a city of 15,000 inhabitants, situated adjacent to Camp Pike, a large Army cantonment used for training drafted troops, and Fort Logan H. Roots, used at first as a concentration point for the mobilization of the Arkansas National Guard. Coincident with the increase of the disease in North Little Rock, measles was reported to be increasing at Camp Pike and Little Rock, a city of 75,000 inhabitants just across the Arkansas River. The presence of true measles in North Little Rock made differentiation comparatively simple, each case being investigated and followed to completion, and all available data compiled.

The interesting factors noted were:

1. The difference in the combined measles and German measles curves in separate communities, illustrating graphically the effect of differentiation and a simple method of control.
2. Recurrent attacks in cases of German measles in the same epidemic.
3. The occurrence of acute arthritis in many cases as a complication, and the absence of pneumonia.
4. The isolation of a hemolytic streptococcus from four cases of acute arthritis, and its possible relation to the streptococci in the true measles pneumonia.

EPIDEMIOLOGY

Attention is called to the combined measles and German measles curves in Camp Pike,[1] Little Rock and North Little Rock (Chart 1). It will be noted that though the height of the curve, which was reached in November in the epidemics in Little Rock and North Little Rock, were identical, the curve of Little Rock remained steady, while that of North Little Rock rapidly declined. This was undoubtedly due to differentiation and measures instituted for control, there being no determined attempt to do either in Little Rock. The height of the combined curves for Camp Pike were reached in December, and differentiation[2] began about this time. It is of unusual interest to note the separate curves of measles and German measles in North Little Rock (Chart 2). The similarity of the height curve shares in importance with the larger number of cases of German measles reported. Since the incidence of German measles was greater than measles in North Little Rock, then like conditions probably existed in Camp Pike and Little Rock, all things being practically equal. This offers an explanation for the height curve from Camp Pike not being reached until December, and the remarkably large incidence there, as patients with German measles could easily have been discharged while still in the incubation period of measles, with resulting cross-infection and new contacts and all their accumulative dangers. The contagiousness of German measles is said not to approximate measles. In schools in the classrooms of which fresh cases were known to have been from one to two days before being discovered, the resulting incidence in those exposed, each classroom being taken as a separate unit, averaged 12 per cent. The average incubation period in 173 cases was seventeen days, the shortest being eleven days and the longest twenty-one days. Recurrent attacks occurred in fifteen cases. In five, three separate distinct attacks occurred in a gradual lengthening period. For instance, in two cases, the second attack occurred three weeks after the first and was subsequently followed by a third attack, five weeks after the second. Only one of these persons was known to have been exposed to an active case before the third attack at a time not inconsistent with the known incubation period.

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[1] The Camp Pike curve was taken from the base hospital daily report of measles patients admitted.

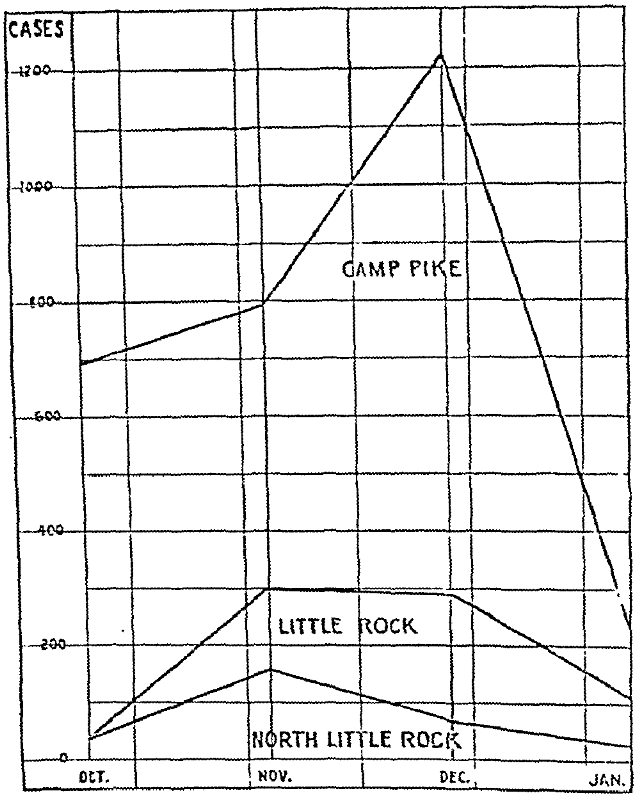

Chart 1.—Total combined cases of measles and German measles, Oct. 1, 1917, to Feb. 1, 1918.

SYMPTOMS AND COMPLICATIONS

In the majority of cases in this epidemic, no prodromal symptoms were noted, the eruption appearing without warning. The most constant symptom and one regarded as diagnostic was the enlargement of the superficial lymphatic glands. Koplik spots were never found. The eruption is rarely ever predominant, but there are always large confluent areas, best seen on the abdomen and the inner aspects of the limbs. The temperature may be above normal, but never higher than 101. German measles, heretofore regarded as the mildest contact disease, with complications infrequent, did not prove so in this outbreak. In thirty-six cases, acute arthritis occurred, recovery being most difficult. In four cases hemolytic streptococci in pure culture were isolated from much enlarged knee joints, one of which later presented a deformity fixation. In two cases, acute nephritis was noted, in one of which three months later there was still a transient albuminuria accompanied by an elevation of temperature. Endocarditis as a complication was noted in one case, and otitis media in eight cases. Pneumonia never followed any case in this series, and many patients could not be regarded as getting the best medical attention and nursing care.

CONTROL

The disease being regarded so lightly, no determined efforts of control were recorded. An attempt at control was made in this epidemic in one small school, situated in an average working class district, the entire control measures being based on the known average incubation period and medical inspection. Pupils of this school, reported ill, were excluded, and those diagnosed as having German measles were quarantined at home, but not isolated from the other members of the family. In ten families averaging three school members to the family, cases of German measles occurred. The other school members of these families not infected but being daily exposed to the cases in the homes were allowed to attend school up to the fourteenth day, when they were promptly eliminated for one week. No new cases occurred that

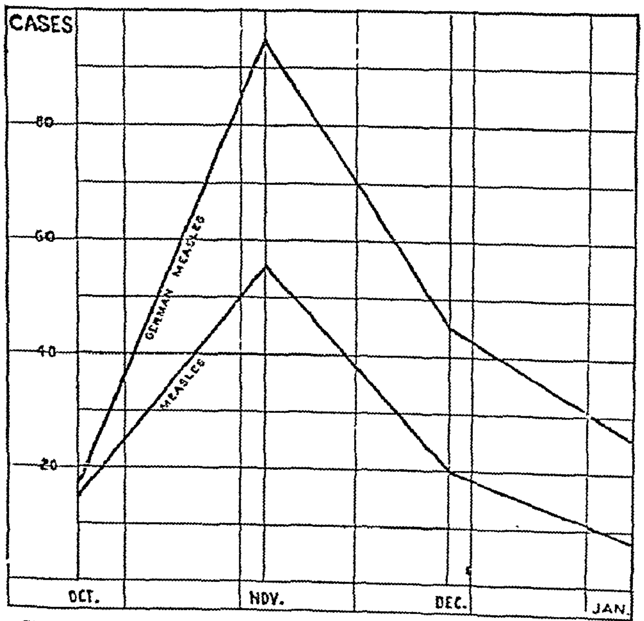

Chart 2.—Total cases of measles and German measles in North Little Rock, Oct. 1, 1917, to Feb. 1, 1918.

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2. By personal communication.

were traceable to the original cases excluded from school accordingly, and absentees were reduced to a minimum.

It is interesting to note here that the contagiousness of the disease in the foregoing families averaged 65 per cent. in contradistinction to that in the classroom, 12 per cent. No person should be released from quarantine without being clear of complications, and particularly until all glandular enlargement, the most consistent symptom, has disappeared.

Clinical Notes, Suggestions, and New Instruments

AIDS IN THE USE OF DAKIN-CARREL TREATMENT

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First Lieutenant, M. R. C., U. S. Army

A GLASS AUTOMATIC SIPHON, FOR DELIVERING A DEFINITE AMOUNT OF FLUID TO THE WOUND AT A DEFINITE PERIOD OF TIME

This apparatus[1] is blown entirely of glass and fused into one compact piece. It is clean, handy and dependable. It can be made in different sizes, depending on the quantity of flushing required. The periodicity of flushing is regulated by a Hoffman pinch-cock on the tubing between the solution tank and the apparatus.

Two bells (*A* and *B*) annealed one to the other are connected by a siphon tube (*C*). A drip point is annealed into the upper end of the upper chamber. Both chambers have air vents.

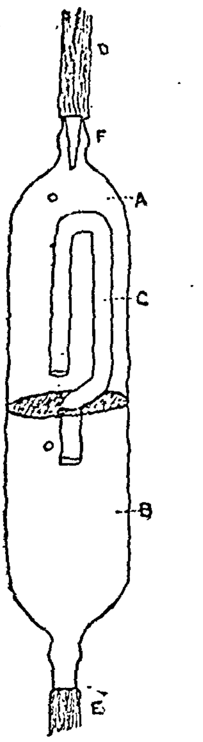

Fig. 1.—Glass automatic siphon, for delivering a definite amount of fluid to the wound at a definite period of time: *A* and *B*, upper and lower chambers; *C*, siphon tube; *D*, tube leadi[illegible] to solution tank; *E*, tube leading to Carrel tube; *F*, drip point.

The apparatus works as follows: Solution from an irrigating bottle or bag is allowed to pass a pinch-cock at a fixed rate. It accumulates in the upper chamber *until it reaches the highest point* of the siphon, when it suddenly is emptied by the siphon into the lower chamber. Here, by virtue of its height and its weight, it forces its way through the holes in the Carrel tube and flushes the wound. The flushing is periodic and eliminates the inconstant human element which is so often the cause of failure in the Dakin-Carrel technic.

A SUCTION DRAINAGE BELL FOR APPLYING DAKIN-CARREL TREATMENT IN EMPYEMA

This apparatus can also be applied, without the suction, in sterilization and drainage of the urinary bladder.

It consists of a flattened bell of glass, resting on a wide flange (*A*), where it comes in contact with the skin around the wound opening. At the upper end of one diameter are two small tubular openings (*B*) for transmitting the usual Carrel tube into the wound cavity. One of these may be used for *flushing the bell* and *for cleansing*. On the opposite side is a large tubular opening (*C*) for carrying off drainage, by means of a rubber tube *into* a waxed or rubber bag. Also, *to this* latter opening may be applied vacuum *suction in* empyema cavities by connecting with a vacuum water suction pump. The apparatus is held in position by a rubber dam fitted on the flange and by adhesive. By its use one can save large quantities of dressings, [illegible]em. It prevents secondary contamination of the wound, and permits instillation of neutral solution of chlorinated soda. It allows for drainage which seeps out beside the Carrel tube; and in the urinary bladder, it does away with that constant overflow of foul smelling urine. In empyema it permits the use of negative pressure to expand the lung and hastens obliterations of the empyema cavity. A Furniss rubber empyema spool is a valuable aid. It is made of glass; can be removed easily for cleansing and boiling, and can be as easily reapplied.

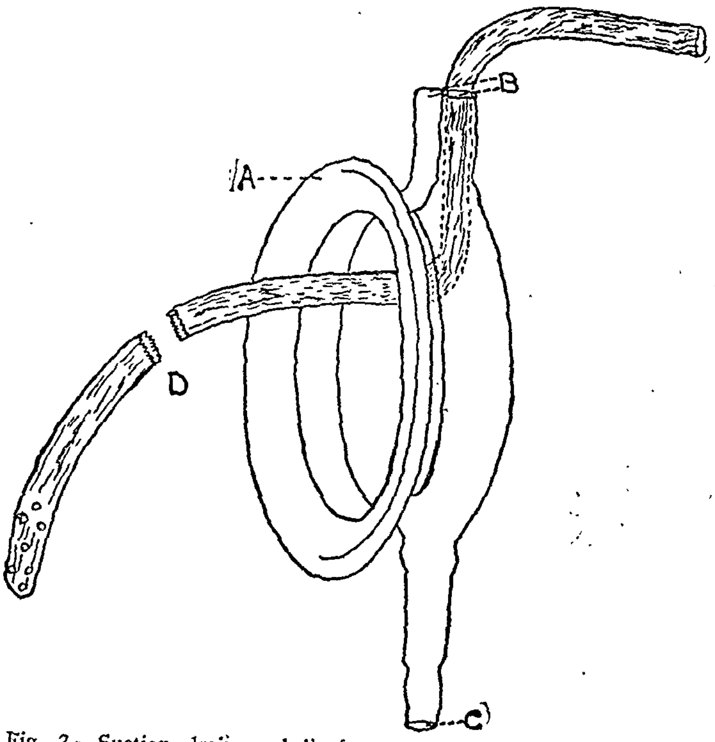

Fig. 2.—Suction drainage bell, for applying Dakin-Carrel treatment in empyema: *A*, flange on which bell rests; *B*, tubular openings for transmitting the usual Carrel tube into the wound cavity; *C*, large tubular opening for carrying off drainage; *D*, Carrel tube.

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[1] An apparatus [illegible] was described by Lilienthal [illegible] Surgeon.

SUCTION DRAINAGE OF SUPRAPUBIC BLADDER WOUNDS: DESCRIPTION OF A NEW PUMP

Charles W. Bethune, M.D., Buffalo

One of the most unpleasant features of suprapubic bladder drainage is the constant saturation of the dressings with urine, together with the all-pervading odor, not to mention the present high cost of dressings. The patient's skin becomes excoriated, and he also suffers the discomfort of frequently lying in a puddle if the attendants do not promptly change the saturated pads.

Numerous attempts have been made to remedy this with various ingenious suction devices, the first of which I believe was Dawbarn's. Davis[1] uses a vacuum bottle arrangement; Hume, Logan and Kells[2] an electric pump with an alarm clock switch; Wallace[3] an apparatus invented by Edmund White, resembling the Dawbarn. All of these appliances have faults which I have tried to obviate. Dawbarn's and White's require the bringing of several gallons of water to the pump daily and the removal of an equal amount. Davis' *requires an air pump to* produce the vacuum, and a very tiny perforation in the rubber tubing puts the pump out of commission. The pump of Hume, Logan and Kells is dependent on the electric current and costs four times as much as mine. So far as I know, Dawbarn's has been abandoned.

As the diagram shows, my apparatus consists of 2 *gallon* carboys held necks opposite with the long axis in the same line by a frame pivoted at the middle to a stand. The *top* bottle, *A*, *is filled with* water to which 1 *teaspoonful of*

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1. Davis, E. G.: Vesical Drainage, The Journal A. M. A., *May 27, 1916*, p. 1680.
2. Hume, Logan and Kells: An Improved Automatic Suction Apparatus for Suprapubic Cystotomy Operations, Am. Jour. Surg., June, 1916.
3. Wallace, Cuthbert: Prostatic Enlargement, p. 15C.

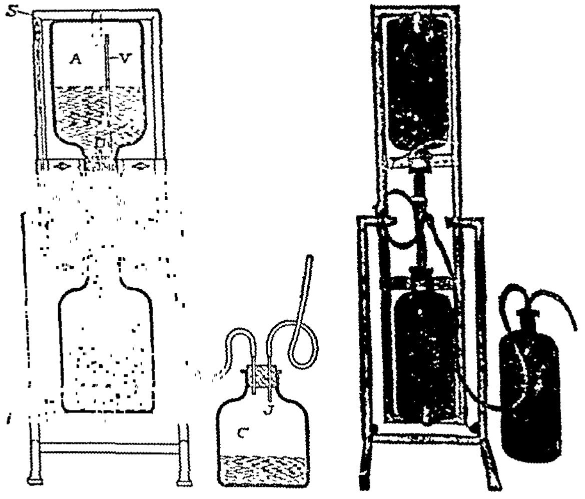
phenol (carbolic acid) is added to prevent the formation of fungi. The water drips through Tube D, on which is a drip clamp, into Bottle B, at the rate of 5 drops per second. A negative pressure is formed in the top of *A* which is transmitted down Tube V to the collecting bottle, *C*, the water in the bottom of *B* forming a valve and preventing the vacuum from being lost. Tube E forms an outlet for the air in *B* displaced by water dripping into it. A similar tube, *S*, forms a safety valve for *A*, and when the negative pressure in *A* and C exceeds 14 inches of water or about 1 inch of mercury, admits air into *A*, preventing too strong a vacuum.

When the top bottle is empty, which takes about eight hours, the bottles are reversed by turning them on the axle, when *S* assumes the function of *E*, and vice versa. The bottles lose a small amount of water from evaporation through *S* and *E*, and require replenishing about every eight weeks. To do this or to fill them in the beginning, a funnel is attached to Tube S by a rubber tube and the liquid poured in from a pitcher; or after the tube is full, the distal end is placed in a pail placed above the pump, and allowed to act as a siphon.

All parts of this pump except the frame are made from articles obtainable in any city or hospital, and in case of breakage can be replaced anywhere. Owing to unfortunate experiences in having two instruments of my invention appropriated by others as their own invention, I have applied for a patent for this pump.

My pump is self-contained and needs no accessories to operate it, is independent of all running water, air pump or electricity, and all the attention it needs is reversal of the bottles every eight hours.

The pump should be placed between the head of the bed and the wall. The tube from the Y on *V* to *C* should be about 6 feet long, and at some point elevated above the level of Bottle A. This is best done by a loop of string attaching it to the top of the bed. The tube then runs down to *C*, placed on the floor under the bed beneath the patient's pelvis. A small catheter is inserted in the suprapubic wound and fastened to the skin by several strips of adhesive plaster. This is attached to a tube running down hill to *J* so that the only suction necessary is to draw the urine from the bladder up over the level of the abdomen.



Apparatus for suction drainage of suprapubic bladder wounds.

Voluminous dressings are to be avoided, as they prevent air from entering the bladder to replace the urine sucked out. Two or three layers of gauze are sufficient. If a heavy pad is used, the bladder is apt to become distended with urine. Then it will well up through the wound alongside the tube before suction starts.

When granulations hug the catheter tightly it should be removed. The wound usually will close in a few hours if the wide strip of adhesive plaster is put over it tightly, pressing the lips together.

In the majority of cases the wound has closed in two weeks. Some have taken three, one four and one six weeks. Two very debilitated patients died in the eighth week with the wound still draining.

Causes of Failure to Secure Satisfactory Suction.—If the safety valve continually blows, the catheter may be stopped up; the drippings at *D* may be too fast; the suction tube may be kinked, or the suction tube may collapse through being made of too soft rubber. If the pump is working but no urine drops into *C*, the suction tube leaks; one may determine the point of the leak by beginning at the catheter and pinching the tube at intervals; when the safety valve blows, the leak must be distal to this point; or the catheter may have slipped out of the wound, or the cork of *C* may be loose.

When the pump is operating, the water in the safety valve is continually jumping up and down, and drops of urine are falling into *C* every few seconds. Care must be taken that Tube J projects into *C* lower than the other tube, or urine is apt to be caught up and pulled into the pump. If water is pulled from the pump into *C*, the long tube from *V* should be elevated more where it passes the head of the bed.

This pump has been in use for two years at the Sisters of Charity Hospital as well as by several urologists and general surgeons, and has been found uniformly satisfactory.

By clamping the safety valve and opening *D* fully, the apparatus is very satisfactory in nose and throat operations or wherever suction is used in operating. It has also been used with success by Dr. E. J. Meyer in draining empyemas. The pump is manufactured for me by Sands and Levy of Buffalo, N. Y.

520 Franklin Street.

Military Medicine and Surgery

THE ARMY IN RELATION TO THE TUBERCULOSIS PROBLEM *

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In the early part of the year 1917, just after this country plunged into the great war, there was much anxiety expressed as to tuberculosis among our soldiers. The view held seemed to be for the most part that the health of the soldier undergoes deterioration as the result of his military service such that he who enters with an inactive or concealed tuberculosis might be expected to develop an active and serious form of the disease. Many papers were written which took this alarmist view and recommended that the extremest care be expended in examinations with a view to the elimination from the army of all those who exhibited the slightest signs even of old and completely healed tuberculosis. The assumption here evidently was that all soldiers had been submitted to an examination adequate to detect all active forms of the disease, so that tuberculosis, if found to exist at a later time, must have developed as a result of army service. Unfortunately, however, those conversant with the facts were willing, however reluctantly, to admit that this was not necessarily the case; that, given the hurry and confusion of hasty enlistments and the varying skill of the examiners, it was quite possible that some men, even many men with tuberculous disease, might be admitted as sound into the ranks of the army. The existence of tuberculosis in the army is, therefore, by no means necessarily evidence that army life in itself favors the development of the disease.

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* Jerome Cochran Lecture, read before the Annual Meeting of the Alabama State Medical Association, April 17, 1918.

We have, then, two views to consider: First, army life per se exercises an unfavorable effect on healed tuberculous lesions and awakens active tuberculosis very easily so that the tuberculosis of the soldier develops as an active disease after entrance into the army in the persons of those who were practically well at the time of such entrance. Second, that the tuberculous soldier brought his tuberculosis in an active stage with him into the army. He should have been excluded on the entrance examination but was not; the active disease was there from the outset, and the progressive nature of the affection which finally led to its detection was only what might have been expected when a sick man was subjected to fatigue and exposure.

Which of these two views is the correct one? The answer must be that neither one is absolutely correct. Some men will develop tuberculosis though apparently free of the disease when examined for admission. The first view has, therefore, something in its favor. But the percentage of such cases, what is called the unavoidable percentage, is very small. Measures adopted to forestall such developments are useless, because the cases cannot be detected in advance, and, moreover, harmful because tending to the exclusion of many men perfectly fit to become soldiers. Practically we may say that if an army develops much tuberculosis this is due to the fact that the men brought with them the disease in an active form when they came in from civil life. The remedy, then, is evidently an examination which shall be efficient enough to exclude manifest cases of tuberculosis but which shall not regard the old and circumscribed evidences of slight impairment of the pulmonary integrity. It was an examination of this kind which was instituted and carried out on our troops during the fall and winter of 1917, the examinations, however, not being completed until the spring of 1918. In round numbers, 930,000 men were examined, and 7,500 cases of tuberculosis were detected as the result of this examination. It is not claimed that the examination was perfect. Some cases, no doubt, were overlooked that should have been detected, and some were excluded from the army who were perfectly able to serve. Mistakes must occur when large numbers of examiners go hastily over enormous numbers of soldiers. But the aim was to get rid of as many cases of manifest tuberculosis as could be detected in an examination so rapidly performed as not to interfere too much with the all-important training of the troops rather than to delay matters by seeking a perfection unattainable under the difficult conditions. That 7,500 cases of tuberculosis were removed is a cause for satisfaction. However many cases may ultimately develop, it is at least certain that the total is less by 7,500 cases than it would have been if there had been no reexamination.

THE ARMY AS A FIELD OF STUDY

The army is a good field for the study of some problems. The conditions of life are comparatively simple and the large numbers concerned give a value to the statistics greater than those derived from the much smaller number of cases available, as a rule, for study in civil life. Unexpected light has been thrown on the questions which we have just considered by the experience of the French army. As you may recall, the distinguished French physician, Landouzy, announced that 86,000 French soldiers had been invalided on account of tuberculosis in the first year of the war. This announcement was received with dismay in this country. It served as a text for the pessimist, and seemed to warrant gloomy forebodings as to the fate of our own soldiers. But new light has recently been thrown on this subject. The French minister of war reported that of this 86,000 men, considerably less than one-half have been found on revision to have tuberculosis. And there are not wanting those who claim that of this fraction a very considerable percentage has really no active disease, so that of the 86,000 barely 20 per cent. are really tuberculous. And here is an important fact. Landouzy himself states that, as a rule, those who were found to have an active tuberculosis had brought the disease with them into the army. We have thus an unexpected corroboration on a large scale of the view expressed above. Army life is not especially favorable for the development of tuberculosis. Those soldiers who enter as sound men have every reason to expect that they will not develop tuberculosis as a result of their army experiences.

Another fact brought out by the war is worthy of note in this connection. We are accustomed to hear the view expressed without contradiction that chronic semistarvation necessarily develops tuberculosis in a large number of its victims. Consequently we were all prepared to expect an enormous incidence of tuberculosis among the half-starved French prisoners of war in Germany. The Swiss doctors predicted that 30 per cent. would become tuberculous. But experience shows that while in some groups the percentage of tuberculosis has been considerable, in others the percentage in those returned is extremely small. According to recent advices, among 175,000 repatriated French civilians who had been held as prisoners, the percentage of the tuberculous was only 0.6. This remarkable showing seems to prove that even under the most unfavorable conditions a life in the open air prevents tuberculosis from exercising a dangerous sway.

We have reached the conclusion that a serious incidence of tuberculosis in the army would mean that tuberculous men had been admitted to it. The fact would discredit the professional expertness of the army surgeon rather than the hygiene and health conditions of the army service. An important lesson may be drawn from this fact which may serve to quiet some anxieties.

CONTAGIOUSNESS OF TUBERCULOSIS

You have been told that tuberculosis will develop under the conditions of army life and that there is danger of the disease being communicated from the sick to the well; that each tuberculous man is a potential source of infection to those around him; that consequently he should be isolated at once and eliminated from the hospitals of the mobile army at the earliest possible moment. I have sometimes thought that the ease with which the program of examination for the enormous masses of men of the army was put through—appalling task as it seemed at first sight—was to be explained by the prevalence of the notion that we must be rid of the consumptive, not so much because he is a weak link in the chain, not because he occupies a place that should be filled by a fighting man, but because he will spread disease among the well. There is some advantage, then, in this idea if it has enabled the useful work of reexamination for tuberculosis to be carried out. But though this advantage has been reaped, it is certainly well to revise our notions as to the contagiousness of tuberculosis. Everybody knows that doctors and nurses labor for years in closest contact with the consumptive, yet it is rare for them to develop tuberculosis in their own persons, and we have all seen many a delicate wife or mother tend a dying husband or son without contracting the disease. We have to admit that many are immune, however great their exposure. But on the other hand, there are cases in which both husband and wife have consumption, or in which those who occupy the same room or work at the same bench with a consumptive finally are found to be themselves infected. We do not stop to think that with a disease as common as tuberculosis it must frequently happen that cases of the disease will develop simultaneously without being derived one from the other, that a man who had or was going to have consumption might marry a wife doomed in advance to the same fate, or that if conditions of health, food, ventilation, etc., were bad enough to break down the health of one worker, they might be bad enough to have the same result with his neighbor. We do not stop to think of these possibilities, but instead we say that consumption is contagious, and the proof of the fact is that our neighbor died of consumption and his wife has caught it from him, the man who worked next to the consumptive in my factory has got the disease from him, etc. A great deal of perfectly preventable distress has been due to the alarmist's attitude toward the question of contagion of tuberculosis. The really cruel persecution of the consumptive, who is driven from his house and from his position through the fear that he will infect others, is based on what I must characterize as highly exaggerated notions of the danger of such infection. All admit that some are immune to infection; the question is, Are there others who are readily infected, and is this class a numerous one? The prevailing view is that the danger is so great as to justify the most stringent measures to abate it. A few with whom I must class myself believe that the danger is very small, so far as infection from adult to adult is concerned, and really demands preventive measures only in the case of young children.

I wish that time would permit me to set forth in detail the scientific reasons on which this opinion is based, but that is impossible. I must content myself with inviting your attention to the declaration of Landouzy. Years have elapsed since his 86,000 consumptives were weeded out of the French army. There has been time enough to judge of the end-results of their presence in the ranks, and on sober second thought the decision is reached that the consumptive brought the disease with him into the service. There appears no evidence that the disease developed frequently, at least after entrance into the army. Consequently we draw the conclusion that the disease could not have been communicated to any considerable extent, to say the least, from one soldier to another. Here is an experiment on a large scale; thousands of consumptives were put in closest contact with millions of healthy men, and the result after four years is that it cannot be shown that such proximity did the well men any harm.

RELATION OF MEASLES TO TUBERCULOSIS

We may, therefore, be reassured as to our army, so far as fear of spreading the contagion of tuberculosis is concerned. The soldier who enters the service in good health runs very little risk of acquiring tuberculosis from association with his fellows. There is, however, unfortunately a darker side to the picture which we in our zeal for the whole truth must not overlook, namely, the relation of measles to tuberculosis. Wherever large bodies of men are brought together, measles seems to break out. The disease is relatively insignificant when it seeks to attack the city dwellers. Most of them have already had measles and are immune. Not so among the country boys. Regiments made up of men from the farms have been severely tried. Many men have died of pneumonia following measles, and in some tuberculosis has developed as a sequel, showing the strange relationship that exists between the two diseases. In order to develop the facts and to lose no time in the treatment, orders have been given that all soldiers who have had measles shall be examined twice at intervals of a month to ascertain whether or not tuberculosis has developed. It has been found as a result of these examinations that of 5,945 measles patients reported as examined, 173, or 2.91 per cent., have developed an active tuberculosis. Here it is not a question of the transmission of tuberculosis from one to another, but of the reawakening of a latent tuberculosis as a result of the infection with measles. It should be added that it is probable that the number of really tuberculous cases is less than the foregoing figures would indicate, that some of these cases classed as tuberculous are rather cases of as yet unresolved pneumonias; but on the other hand, no doubt, not all cases of tuberculosis reactivated by measles have yet been detected. There again is an experiment on a large scale, which we will hope will prove in the end to have resulted more favorably than the facts now available would seem to indicate.

RECONSTRUCTION OF THE TUBERCULOUS SOLDIER

Tuberculosis having been found to be present in an active form in a given case, what shall be done with the soldier? The answer that many have given is to retain him in the service and "reconstruct him." Many brains have been actively engaged in plans for reconstruction hospitals and workshops and for apparatus to be used in the work. The term has been most employed by the surgeon. It includes the restoration to function or the teaching of new function of maimed extremities; the recovery of some degree of comeliness in faces with horrid deformities from wounds; exercise to keep or regain the activities of wounded nerves or muscles, which as soon as possible is obtained through some useful form of labor, and the teaching of new trades suited to the altered capacity of the worker, sometimes even the development of unsuspected abilities to do more excellent and better paid work than the man has ever done in his days of health.

The wounded man who has been reconstructed in the widest sense has been made over to some extent both physically and mentally, and consequently we may hope is morally aided as well. This is certainly a noble aim; yet, if we judge from the results in similar work abroad, one that we may reasonably hope to attain if our efforts are wisely guided.

As applied to tuberculosis, however, the problem of reconstruction, while it is similar, is yet really more difficult than it is in surgical cases. Here there is no question of repair to injuries: the tuberculous soldier has all his members intact. But whereas in surgical cases the effort is to set the patient at work at the earliest possible moment, in tuberculosis our aim must be at first to keep the patient still, to prevent him not only from working but even from moving about. And it may be necessary to continue him in this state of inertia for many months in some cases, if good and permanent results are to be attained. All the preconceived ideas of the patient, and in many cases the restlessness characteristic of the weakened nervous system of the consumptive, militate against the notion that prolonged rest in bed is needful or even desirable. To be successful in carrying out such treatment, it is necessary to instruct and to persuade. The physician must have faith in the treatment and a real interest in the patient's welfare if good results are to be attained. Not only does the physician study the patient, the patient studies the physician as well. In his daily visits the physician is weighed and judged. The patient soon knows whether the physician really believes what he says, whether he really cares to cure, or whether, on the other hand, his words of admonition and counsel are merely the perfunctory words of an official paid to perform a task in which he has no real interest. The physician must therefore have zeal in his work and a persuasiveness which succeeds because based on a true desire to help, and a belief in the efficacy of the means employed to cure. But more than that, he must be well grounded in the pathology of tuberculosis and be able to teach the patient from such a fulness of knowledge that it inspires faith in his teachings. The tuberculosis hospital or sanatorium should be a school for the education of the patient in the right way to live. But where a course of life extending over years is the thing taught, it is necessary that the patient shall know the reasons for the precepts given him. The *ipse dixit* of the physician may suffice for the moment. Its effect will fade in years to come. The facts on which the treatment of tuberculosis are based are not difficult of comprehension unless beclouded by a technical vocabulary which the patient cannot understand. Explain to him the reasons in a simple language, convince him of your interest in his welfare, and in many cases you will make a convert.

Some of the patients, however, will not be convinced, will not do well under treatment, and may seek an early discharge because restless and unhappy. A better result is not attained among those presumably more easily taught because more educated and of higher intelligence. Docility of the patient is one of the most important prerequisites of success in treatment, and a certain percentage will always be found indocile. In those who submit with good grace to the treatment, the danger exists on the other hand that the enforced idleness may become demoralizing, that having become accustomed to a life of repose the patient will shrink from the idea of resuming a life of labor; and when the time for work has come will demand his discharge in preference to undergoing a course of instruction, though that be calculated to fit him in the end for more and better work than he has ever before accomplished. The methods of instruction mentioned a moment ago are, in my judgment, the ideal methods. It can hardly be expected that the results attained by all physicians with the hundreds, if not thousands, of such patients will reach these ideals: and even the best instructed and most docile, when they pass from under the influence of their physician, will be tempted to stray from the course of life prescribed or become restless and desire a change of scene.

The old pension system was demoralizing to a certain type of men in that it enabled the pensioner to live without work. Fortunately, by the act that created the Bureau of War Risks, it is provided that those who serve in the present war will not be subject to the pension laws but will have a compensation in case of injury or disease which will be determined by the War Risk Board. Now if this compensation is arranged so that one who remains in the service will be better paid than one who receives discharge and returns to his home, it will be possible to retain the patients in the military service and under treatment. If this is not arranged, I believe that the majority of the patients will in the end seek discharge; and if they desire discharge, they must be given it. In this event the program of reconstruction will be carried out but partially and imperfectly. I wish to emphasize the conviction gained by many years of experience with this class of soldiers that unless it is made pecuniarily profitable to remain in the service, the majority of the tuberculous will sooner or later prefer to be discharged and return to their homes rather than to submit to a course of treatment, even though this treatment aims at and often succeeds in effecting a permanent cure. The heart of the philanthropist glows at the thought that a generous nation is willing to keep on its payroll soldiers who can never again fight on its behalf, that it expends large sums in providing means by which these unfortunates may be cured of their disease and trained to work, or if the conflict goes against them, may be furnished an asylum in which they can spend their last days in peace. But if we are to practice philanthropy successfully, we must know the world as it is, not as we could wish it to be. These patients are not, as a rule, philosophers and sages. They know little or nothing of the treatment of tuberculosis or of the results that are to be expected from it, or of the way in which such results may be obtained. Yet many of them prefer to follow their own judgment rather than listen to advice. Such men pass quickly from an unfounded optimism to its opposite, an equally unreasoning pessimism. They wish to go home today, because they are doing very well and they can pursue the treatment to equal advantage there. Tomorrow, perhaps, they will say that it is of no use to persist in the treatment, that they are not gaining in health and that they might as well go to their homes and get such pleasure as they can from what remains to them of life. Not only the weaknesses but also the best emotions of the human heart are enrolled on the side of the opposition. The love of the patient for his family, the yearning of the wife or of the mother for the husband or son are so many cords drawing him away from what we conceive to be the path of duty. We cannot blame him if he yields; only the careless or the recreant could be insensible to such pleadings. Yet they are the voice of the siren, nevertheless, enticing him to renounce a future good for a present enjoyment. The real love for wife or mother would say: "You are dear to me, and therefore I cannot come. I love you so much that I must stay and try to save my life for your sake. I must forget you in the present in order that I may enjoy you during a long future." There is a wisdom and a moral heroism in such a resolve which commands our respect. Would that we could affirm that so heroic a determination is invariably rewarded by the success it deserves. It is sometimes a bitter thought to the physician who has persuaded the patient to stay, that he has been responsible for keeping a patient uselessly under treatment and of thus depriving him of the loving care that friends would have lavished on him if they had been allowed the chance. Here the only consolation is the thought that so far as could be determined at the time, the decision made was the correct decision even though the result was ultimately disaster, and that the unfortunate patient gave a better proof of his affection by remaining to fight than if through weakness he had given up the conflict. But what an incentive for the physician such an event is, to give the best efforts of which he is capable in order to understand, so far as fallible man can, the nature of the disease he is seeking to combat!

UNTHINKING PHILANTHROPY

The philanthropist himself is sometimes inclined to interpose with benevolent motives to ask for action which is really to the prejudice of the patient. Thus a priest implored the hospital management in the name of God to release a patient who lived in comfort in the balmy air of the Southwest in order that he might go in the dead of winter to a bleak district of the North and to a humble home destitute of all suitable accommodations for a sick man.

Now that we are speaking of the philanthropist may I be pardoned for a slight digression? It is this: A surprising feature in many interested in philanthropy is their apparent lack of civic conscience. It is the fashion today to spend money with a lavish hand for all sorts of good things, perhaps sometimes to spend more than the goodness of the thing really warrants. When the reaction comes and taxes grow irksome, as they become more familiar, there will be a day of accounting; and in that day the size of the pension list or, more accurately, the list of those entitled under the present law to compensation will be one of the numerous things that will be severely criticized. The regular army officer brought up in an economical school has striven to diminish, as much as in him lay, the size of this list by seeking to exclude from it those who had entered the army through some oversight with tuberculosis contracted long before, a condition therefore for which army service could not justly be held accountable. This laudable effort to help the future taxpayer has, however, encountered the most strenuous opposition on the part of various philanthropists, many of them women. Though the man whose cause they champion had been in the army only a month before his disease was discovered, and though that disease was of the most chronic type, they are quite sure that the poor man had been perfectly well until he left his home and entered the army, and that the exposure of army life had certainly been the cause of all his troubles and that the government should without any doubt be required to support him.

Even the philanthropic life has its drawbacks. How different is reality to the dreams of the unthinkingly benevolent in which all the good is on one side and all the bad is on the other, and it is perfectly easy to determine what the proper course is. Such considerations, however, should not discourage philanthropy, but rather inspire caution in the practice of it. Philanthropy can be truly benevolent and altogether beneficial only when those who would benefit their fellow men are willing to make an exhaustive study of the conditions.

Physicians are constantly seeking new and infallible means of diagnosticating disease. Very often a discovery is heralded as a means of establishing a certain diagnosis in some morbid state. But almost always when the first enthusiasm abates it is found that, after all, there are exceptions. The new sign or reaction is not absolutely pathognomonic. There never will be a time when a physician can practice his profession with scientific success without the use of all his brains and all his acumen. And it is very much the same way with philanthropy. Measures which seem beneficial may produce evils. What is best for one class at one place may not be best for all classes at all places. There is no easy way of always deciding what it is best to do.

PREVENTION OF TUBERCULOSIS AMONG CHILDREN

It is a pleasure, therefore, to be able to point out one philanthropic measure which is too much neglected for other measures really of much less importance, yet with regard to which there can be no doubt that it is a long step in the direction of abating the scourge of tuberculosis. I refer to the prevention of tuberculous infection among young children. I have expressed a doubt as to the seriousness of the danger of infection for the adult who has already come into contact with the tubercle bacillus. There is no question, however, that so far as the young child is concerned, where there is virgin soil for the tuberculous infection, tuberculosis is as infectious as measles. In civilization it must needs be that infection with tuberculosis come sooner or later to all; but it is important that the infection shall not come too early in life, and of the utmost importance that when it does come the size of the infection shall be small and that it be not frequently repeated.

Another measure of perhaps equal importance is the enforcement of the best conditions of hygiene as respects fresh air and sunlight and food for the growing child in order that it may have strength to master the small infection and convert it into a beneficent vaccination instead of permitting it to grow till it becomes a life-long menace and too often a source of death. It cannot be pointed out too often that in spite of our neglect of elementary precautions, the majority of our population nevertheless succeed in obtaining unconsciously that beneficent vaccination so that no matter the exposure, they do not acquire a clinical tuberculosis. What we must do by our philanthropy is to devise means whereby the unfortunate third or fourth of our race who are now not so successful in their struggle against the enemy may be enabled to join the more fortunate majority until the percentage of active tuberculosis becomes reduced to an insignificant fraction and finally vanishes entirely. Given wise philanthropy which persists in its endeavors, this is no utopian dream. Whether tuberculosis as a menace and a drain on society shall be eradicated or not depends on the care which shall be extended to the coming generations of children still unborn. To abolish the slums, to improve the housing conditions in general of the poor, to teach proper cookery, proper selection of foods and the benefits of fresh air, sunlight and cleanliness is to hasten the advance of sanitation along the road on which progress has already been made from generation to generation. Tuberculosis is already slowly diminishing in prevalence as a manifest disease in most countries. We can do much, however, to hasten its disappearance by our organized philanthropy if wisely directed. Yet all these means will fail to attain what we could wish unless we add one additional measure, the segregation of the infant from sources of contagion. The French have seen the light more distinctly than other nations. In France the formula is: Either remove the young child from the presence of the consumptive or the consumptive from his family, if there are young children. The child must by all means be prevented from receiving the massive infections which it is sure to get if it lives with the coughing consumptive.

Here is a definite program, but what a difficult one, for against it are all the impulses of the most sacred affection, the love of parents for their children. This brings us back to the consumptive soldier. At the beginning of the war it was recommended that the tuberculous should be returned to the vicinity of their homes for treatment in order that they might visit their families or that their families might visit them. This I call unthinking philanthropy. Often it is true such visits might do no harm, but the distinction between harmless and harmful is not clearly made. The new baby will infallibly be brought along for the father to see it, unless education is vigorously instituted in advance of the father's return. What an advantage for the children if the father cannot come home to them! How much higher the moral elevation of the man who is taught to sacrifice his paternal yearnings to the best interests of his children, than that of him who cannot consent to live without his family! There is much to be effected in this direction by careful instruction of the consumptive and of the adult members of his family. But what shall be done with the minority of the careless and the wilful—those who cannot or will not understand, the weaklings who are ready to sacrifice the welfare of their infants to their own selfish longings? Shall they be restrained by the hand of the law or shall their children be taken from them to be cared for in public institutions? The French say, yes. What shall we say when the question must be met? Do we recognize sufficiently that true philanthropy sometimes hides behind a mask of sternness?

CARE OF CONSUMPTIVE SOLDIERS AND THEIR FAMILIES

Nothing could be finer than the spirit of our people in these sad times. Nearly all are anxious to help in some way, feeling that they must do something for their country. Sometimes there is the regret on the part of those who must stay at home that there are not more numerous ways in which they can do something really useful and sacrifice their ease and pleasure to some good purpose in the cause of patriotism. Intelligent cooperation in the care and management of the wounded and sick soldiers and in providing for their families is one of the directions in which the energies of the charitable can find an outlet. I bespeak your interest and sympathy for that peculiarly unfortunate class, the consumptive soldiers and for their families. Would that I could hope that my words have thrown some light on the difficult problems which must be met in the sociological study of the tuberculous and its practical benevolence as extended to them.

It is commonly remarked that this terrible and gigantic war has changed the world. We shall never again be the same people. The moral uplift of the present is unmistakable. We are willing to sacrifice ourselves now for our country. May we not hope that this patriotic devotion, this moral uplift, will continue after the war has ended? We are willing now to get together, to labor in unison for our soldiers. We are willing to work at hard tasks, without compensation oftentimes, in order that the business of the country may cooperate to the best advantage with the fighting force. Why should not this organized effort continue after the war? Our country is no less our beloved country because peace has come. Why should we not put our team-work in which we are now so experienced at the disposal of the noble cause of philanthropy, see that the poor are not oppressed, know what goes on in our jails, our asylums, our workhouses, elevate the submerged fraction of the population, and abate the causes of disease and accident. His army experience is but an episode in the life of the tuberculous soldier. He, as a rule, owed his tuberculosis to the conditions of civilian life before he entered the army. The tuberculosis of the army merges into that of the whole population. The great problem of tuberculosis will remain after our army has laid down its arms as one that calls for all our efforts, yet is, we may confidently believe, a problem for which in time we can, we must, find a triumphant solution.

WAR EDEMA (KRIEGSOEDEM)

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From June, 1916, until February, 1918, I was a captive in the hands of the Germans, and for the most of that time I was employed as medical officer at Minden, one of the largest concentration camps for prisoners of war in the province of Westphalia. During my thirteen months there, many thousands of prisoners of all the Allies passed through our hands. One of the most prevalent diseases observed there was the condition called by some German observers *Kriegsoedem* (war edema), or, as it was officially known at Minden, *Erschöpfungszustand mit oedem* (state of exhaustion with edema).

ETIOLOGY

The condition was found chiefly among the Russians and Roumanians, and was especially common during the spring and summer of 1917. Latterly, the Italians captured in the autumn of 1917 were the chief sufferers. The French prisoners at reprisal camps and the English prisoners, who were kept working on lines of communication, also suffered from the disease. In other words, this disease was found among those prisoners who received only German rations, and the disease was most prevalent at the time when the German rations were poorest, that is, the spring and early summer of 1917. During my stay at Minden, I saw about 400 cases in all.

Undoubtedly, insufficient food is the cause of the condition. The German ration is very low in protein and is almost fat free. Unfortunately, accurate analyses could not be made. As the food is given almost entirely in the form of soup, a large quantity of fluid is ingested to obtain a small amount of nourishment. I found that many of these men were in the habit of taking considerable quantities of common salt in solution in addition to their soup. As the whole organism was weakened from insufficient food and hard work, it is conceivable that the extra load of fluid was too great to be eliminated.

CLINICAL HISTORY

The condition commences as a slight edema of the feet and legs, disappearing when the patient is recumbent. Patients were seldom admitted to hospital in this stage, although rest in bed would restore them in a short time.

The usual type admitted to hospital presented a massive edema of the legs, thighs and genitalia, with some puffiness of the eyelids. In bad cases there was edema also of the chest and abdominal walls. Patients complain of general weakness and pain in the legs, especially in the tibiae. They are usually very apathetic. There is extreme muscular wasting and marked pallor. The whole appearance is strikingly similar to that found in chronic parenchymatous nephritis. Uncomplicated cases are afebrile.

The heart dulness is slightly increased to the left. The apex beat is diffuse and feeble. The heart's action is regular, but usually slow. Muscular tone is poor. The blood pressure is low.[1] Hydropericardium was present in a number of cases, but never marked.

Hydrothorax was common and usually bilateral. It was sometimes most copious. In one case I removed 15,000 c.c. by a series of six punctures during a space of two weeks.

Ascites was very common and was sometimes extreme, necessitating paracentesis.

The liver, spleen and kidneys were not palpable.

The amount of urine was variable. At first scanty, it became profuse, as the patient recovered. It never contained albumin or casts. No quantitative chemical tests could be made.

COURSE OF DISEASE

In most uncomplicated cases the patients improved slowly with rest in bed and an increase of German rations. Where abundant food, including meat and fat, could be obtained and was tolerated, improvement was rapid, even without rest. Digitalis and theobromin sodiosalicylate were used, but without appreciable result. Edema of the legs after work persisted for several months, even after the patient had improved markedly in general strength. Relapses were common.

COMPLICATIONS

Dermatitis of the legs was common, and in a few cases lymphangitis and cellulitis.

Bronchitis frequently was present, and in most of the fatal cases there was bronchopneumonia and edema of the lungs.

Colitis, with mucus and blood in the stool, was the most common and troublesome complication. No specific organism was isolated as a cause of this colitis. It is significant that diarrhea of this type rarely occurred among the well-fed prisoners, although they were exposed to the infection, if this was an infectious diarrhea. As a complication of edema, this colitis was often fatal.

PATHOLOGIC FINDINGS

About twenty necropsies were performed in cases of war edema. The most striking feature was the total absence of fat in the body. At the normal sites for fat deposit, in the subcutaneous tissue, in the omentum and mesenteries, about the kidneys and on the heart, the fat was replaced by edema, producing a translucent, gelatinous tissue.

The heart muscle was pale and flabby. The ventricles were moderately dilated.

The pericardium, the pleural sacs and the peritoneal cavity were filled with clear fluid. Old pleural adhesions were often found, and in one case there were many peritoneal adhesions between the liver and the diaphragm.

The lungs usually showed bronchopneumonia and edema.

The kidneys, liver and spleen were pale, but otherwise showed no macroscopic changes.

The liver was usually small.

When colitis had been present, there was thickening and hyperemia of the rectum, sigmoid and the descending colon. Two cases of superficial ulceration were found.

CONCLUSIONS

Kriegsoedem is the result of underfeeding. I believe that the absence of fat in the diet is the chief factor in causing the condition. It is possible that there may be also a mechanical factor in its production. There is *general asthenia* as a result of hard work, exposure, insufficient food and depressing environment. The large amounts of fluid ingested, together with the increased amount of sodium chlorid, may form too great a load to be eliminated by a weakened myocardium through poorly nourished kidneys.

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[1] No facilities were allowed me for the proper estimation of blood pressure, for blood examination or histologic work. Also the collection of statistics was forbidden me, so that I have been unable to give exact figures with regard to cases.

THE PREDISPOSITION OF STREPTOCOCCUS CARRIERS TO THE COMPLICATIONS OF MEASLES

RESULTS OF SEPARATION OF CARRIERS FROM NON-CARRIERS AT A BASE HOSPITAL *

ROBERT L. LEVY, M.D. (Baltimore)
Captain, M. R. C., U. S. Army

AND

H. L. ALEXANDER, M.D. (New York)
Lieutenant, M. R. C., U. S. Army

CAMP ZACHARY TAYLOR, LOUISVILLE, KY.

It is evident from reports coming from various Army cantonments[1] that measles, because of the severity and frequency of its complications, must be regarded as a serious camp disease. Complications necessitate long hospitalization and cause, therefore, a high noneffective rate; bronchopneumonia and empyema have been responsible for many deaths. With surprising uniformity, the complications have been due to infection with a hemolytic streptococcus.

In the report of a commission[2] sent by the Surgeon-General of the Army to study the pneumonia at San Antonio, Texas, two significant facts concerning the relation of the streptococcus to the complications of measles were pointed out: First, a relatively small number of measles patients (11.4 per cent.) harbored this organism in their throats on admission to the hospital; second, many more acquired *S. hemolyticus* in their throats for the first time during their stay in the wards. It was therefore inferred that at Fort Sam Houston, at least, the high incidence of bronchopneumonia and empyema during convalescence from measles might be directly related to the transfer of the infectious agent from one patient to another in the wards of the hospital.

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* From the Medical and Laboratory Services, Base Hospital, Camp Zachary Taylor, Ky.

[1] Duncan, L. C., and Sailer, J.: An Epidemic of Measles and Pneumonia in the Thirty-First Division, Camp Wheeler, Georgia, Mil. Surg., 1918, **42**, 123. [illegible] W. W. [illegible], L. H.: Pneumonia and Empyema at [illegible], The Journal A. M. A., March 30, [illegible] Marine, David: Streptococcal Infections [illegible] Diseases, The Journal A. M. A., Marc[illegible], Spruit, C. B. and Lynch, Charles: Th[illegible] Pneumococcus Groups, The Journal A. M. A. [illegible]

[2] Cole, Rufus, and MacCallum, W. G.: Pneumonia at a Base Hospital, The Journal A. M. A., April 20, 1918, p. 1146.

PLAN OF THE PRESENT STUDY

Ward Routine.—On admission to the hospital, all measles patients were sent to a special "measles receiving ward," which was divided into cubicles by sheets, and where every patient was required to remain in bed. Each day throat cultures were taken on those admitted during the preceding twenty-four hours. Carriers of *S. hemolyticus* were on the following morning sent to the "dirty" wards. Those whose cultures were negative for this organism were held for another day, and if a second swabbing confirmed the findings of the first, were sent to the "clean" wards. Rarely did the result of a second culture contradict the report of the preceding day. All patients in each ward were swabbed again at least once a week. On discovering that a "clean" patient had become a carrier in the hospital, he was promptly transferred to a "dirty" ward.

A separate ward was set aside for the reception of post-measles pneumonia, to which, immediately on the recognition of this complication, patients were transferred.

In both "clean" and "dirty" wards, cubicle isolation was strictly observed. Each patient was provided with a gauze mask, changed every twenty-four hours, and was required to wear this mask constantly when not in his own cubicle. For infringements of this rule, punishments were meted out by the ward surgeon, who also daily gave a short talk to ward personnel and patients on the rationale of the various measures for isolation. In this way better cooperation was insured.

Ward surgeons, nurses and orderlies, when in the ward, were properly masked and gowned.

All patients, in bed or convalescent, were fed in their own cubicles; three or more waiters, chosen from among the convalescents, served the food. At all times, but especially during meal hours, crowding together was prohibited; each man ate either in bed or at his own bedside. In the washroom, only one man was permitted at a time; in the latrines, the masks were worn and no more were allowed to enter than could be accommodated at any one time. A guard, changed every two hours and picked from among the convalescents, was stationed at the door of the latrine to insure the enforcing of these rules. No smoking was permitted.

It may well be asked why such rigid precautions were observed in wards in which only either carriers or noncarriers were cared for, and why these measures are described in detail. As pointed out by Cole, and repeatedly confirmed in our own experience, *S. hemolyticus* is very readily transferred from one individual to another, and no matter how strict the supervision, an occasional lapse in discipline is bound to occur. The slightest break in the chain of precautions may result in disaster. For example, in a "clean" ward, throat cultures made at intervals of a few days revealed the fact that several "clean" cases were being converted into carriers. On swabbing the personnel of the ward, it was found that two orderlies and a nurse harbored *S. hemolyticus* in profusion in their throats. On replacing these individuals with noncarriers, no further contamination occurred. This experience taught us to provide the clean wards with a personnel of noncarriers.

In the "dirty" wards, it is desirable to prevent one individual from becoming a carrier of another patient's strain of streptococcus; for different strains may vary in virulence. It is also worthy of note that among the 388 cases of measles described in this report, only two instances of cross-infection occurred, namely, two cases of mumps, probably admitted to the measles service in the incubation period of parotitis. Capps[3] has recently emphasized the value of masking in the prevention of cross-infection in contagious wards, and has outlined a number of ward measures similar to those here described.

Laboratory Technic.—Cultures from the pharynx and tonsils were taken at the bedside with straight swabs, which were then placed into about 1 c.c of beef infusion broth (+ 0.1), shaken and brought to the laboratory. There they were plated without incubation on 10 per cent. human blood agar plates. In order to insure proper separation of colonies, it was essential to rinse each swab thoroughly by twirling it forcibly against the side of the test tube, then wiping it further at the periphery of the plate, and streaking lightly. After from eighteen to twenty hours' incubation, single hemolytic colonies suggestive of streptococcus were transplanted into beef infusion broth (+ 0.1) and grown for twenty-four hours, when cultural characteristics, staining reactions and morphology were noted. Bile solubility was done only when the pneumococcus was suspected. Fermentation reactions and the degree of hemolysis were not studied.

S. hemolyticus occurred in wide variation in numbers, from but one or two colonies on a plate to almost pure cultures. That this variation was not due to the method of plating was confirmed by repeated swabbing of individuals, with fairly constant findings. Exceptionally, on one day a single or possibly a few colonies might be found, whereas a subsequent culture would reveal none. It therefore seemed worth while to differentiate between the "slightly infected"—those whose cultures showed only an occasional hemolytic streptococcus colony—and the "heavily infected." Those cases were classed as negative in which cultures at no time showed the presence of *S. hemolyticus.*

Twenty sputum cultures were made by spreading a fragment of thoroughly washed sputum over the surface of a blood agar plate. Bronchial secretions were obtained when possible. Of thirteen cultures from streptococcus carriers and seven from noncarriers, all corresponded to the throat swab findings, thus demonstrating that the throat culture is apparently an index of the presence or absence of *S. hemolyticus* in the lower respiratory tract.

INCIDENCE OF STREPTOCOCCUS CARRIERS IN MEASLES PATIENTS ADMITTED TO THE HOSPITAL

Table 1 is self-explanatory. These figures are in striking contrast to the percentages prevailing at Fort Sam Houston, Texas, where only 11.4 per cent. of measles patients were carriers of *S. hemolyticus* on admission to the hospital.

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[3] Capps, J. A.: A New Adaptation of the Face Mask in the Control of Contagious Disease, The Journal A. M. A., March 30, 1918, p. 910.

Of the eighty-nine noncarriers admitted to the wards, twenty-seven became infected during the period of their hospitalization. Contamination for the most part occurred during the early stages of the work, when the ward routine had not been firmly established. These cases are, of course, in the final analysis, classed with the carriers.

TABLE 1.—RESULTS OF THROAT CULTURES IN MEASLES ADMISSIONS

		Number		Per Cent.	
Noncarriers		89		22.9	
Carriers	Heavily infected	299	251	77.1	64.8
	Slightly infected		48		12.3
Total		388		100.0	

RELATIVE INCIDENCE OF COMPLICATIONS AMONG CARRIERS AND NONCARRIERS

Coryza, bronchitis and a laryngitis of variable severity, associated with an initial fever of from three to six days' duration, have been almost constant early accompaniments of each case. A majority of patients have been admitted on the second or third day of the disease, and fever occurring after the tenth day of hospitalization has been regarded as pathologic. Often it was indicative of a manifest complication; but of the uncomplicated cases, forty-seven, or 30.4 per cent., had transient, unexplained elevations of temperature frequently associated with headache and general malaise, but many times without symptoms or ascertainable cause. These unexplained febrile paroxysms, usually of from one to four days' duration, have formed an interesting, though puzzling, feature of the clinical course. They were noted a little more frequently among carriers (17.5 per cent.) than among noncarriers (12.9 per cent.).

TABLE 2.—COMPLICATIONS

Complications	Carriers		Noncarriers	Total	Remarks
	Heavily Infected	Slightly Infected			
Bronchopneumonia	45	2	0	47	Fourteen of these patients are dead at the time of the present writing; some have been operated on for empyema; a number are still in the hospital
Acute tonsillitis	18	7	1	26	
Acute bronchitis	22	1	2	25	Not to be confused with the initial bronchitis
Actve suppurative otitis media	21	1	0	22	On culture, 9 specimens of pus showed S. hemolyticus; 2 Staphylococcus aureus
Empyema	15	0	0	15	All followed bronchopneumonia; on culture, 13 pleural fluids showed S. hemolyticus; 1, pneumococcus
Acute sinusitis	7	3	0	10	
Peritonsillar abscess	7	0	0	7	
Erysipelas	6	0	0	6	The face was affected in each instance
Cervical adenitis	4	1	1	6	Glands quite large, but never suppurated
Peritonitis	1	0	0	1	A terminal infection
Septic meningitis	1	0	0	1	A terminal infection
Totals	147	15	4	166	
	162		4	166	

Of the 388 cases, in 119, or 30.6 per cent., there were complications, a number of patients suffering from more than one. The complications are given in Table 2 in the order of their frequency.

An analysis of this table brings out a number of interesting points:

1. The complications of measles have occurred almost exclusively among streptococcus carriers, the incidence in this group being 36.8 per cent., as contrasted with 6.4 per cent. in "clean" cases. Furthermore, the four complications noted among the noncarriers have been of distinctly minor nature—two instances of acute bronchitis, one of acute tonsillitis, and one of cervical adenitis. In the slightly infected carriers, that is, those showing only an occasional colony in throat cultures, complications have occurred less frequently (22 per cent.) than in the heavily infected (38.2 per cent.).
2. Bronchopneumonia occurred forty-seven times, or in 12.1 per cent. of all cases. This complication has been responsible for many deaths; accurate mortality statistics are not available at the time of the present writing. In fifteen, or 34 per cent., of the bronchopneumonias, the patients have developed empyema.
3. On culture, thirteen pleural fluids showed *S. hemolyticus;* one, pneumococcus. From eleven specimens of pus obtained in cases of acute otitis media, *S. hemolyticus* was grown nine times and the *Staphylococcus aureus* twice.
4. Of 326 carriers, either entering the hospital as such or becoming infected after admission, 211, or 63.2 per cent., have had no complications.

ACQUISITION OF THE CARRIER STATE IN THE WARDS

Reference has already been made to Cole's observations on the ease with which *S. hemolyticus* may be spread from one individual to another in the ward of a hospital, though it is not mentioned that during the period of these observations cubicle isolation or other precautions to prevent the spread of infection were observed.

Experiments were therefore carried out in which wards were "mixed," that is, were filled half with "clean," half with "dirty" patients, in alternate beds. Newly admitted measles patients, convalescents and patients with complications composed the ward roster. All the precautions previously noted were rigidly enforced in order to prevent the contamination of "clean" by "dirty" patients. Yet in one ward, in which fifteen "clean" and fifteen "dirty" patients were placed, at the end of a week, only six noncarriers remained. In another ward of twenty-four, of whom at the start twelve were noncarriers, at the end of the week only three "clean" cases were found. Those patients who became "soiled" as the result of this period of exposure were for the most part classed as "slightly infected." These observations emphasize the importance of rigidly observing every precaution to prevent contact spread, though casting considerable doubt on the efficacy of the methods herein described. Therefore, when possible, if the incidence of complications is to be reduced, carriers and noncarriers should be separated, and cared for in different wards. Such a procedure should prove particularly valuable in camps where the number of streptococcus carriers among measles patients is low, as at Fort Sam Houston, Texas.

DIFFICULTIES OF ERADICATING THE CARRIER STATE

Throat cultures made at intervals in many of the "dirty" wards have shown that the carrier state, once acquired, persists throughout the patient's stay in the hospital. There have been rare exceptions to this rule.

Attempts at mouth disinfection have not been successful. Neutral solution of chlorinated soda in half strength, which has been in common use as a gargle and spray in this and other Army hospitals, will not kill *S. hemolyticus,* even in vitro. Experiments with other mouth antiseptics, notably iodin in glycerin, though successful in the test tube, have been clinically most disappointing. The organisms, apparently safely lodged in the crypts of the tonsils and in the lymphatic tissues of the nasopharynx, are not accessible to the local treatments so far employed. Of the patients discharged from the hospital, 71.7 per cent. still harbored *S. hemolyticus* in their throats.

EPIDEMIOLOGY

It was shown earlier in the year by one of us[4] that Camp Taylor was heavily infected with *S. hemolyticus,* and during the past four months representatives from almost every organization have entered the base hospital with lesions caused by this organism. In the present epidemic of measles, it was striking that of the 388 cases studied, 346, or 89.1 per cent., came from the One Hundred and Fifty-ninth Depot Brigade, an organization into which all new men entering camp are attached during the early period of their training. Accordingly, throat cultures were made on ninety-five men of Company 5 (Second Battalion), composed of individuals from various parts of the brigade, most of them having been in service about six months. Of these, seventy-nine, or 83.2 per cent., were carriers of *S. hemolyticus,* 64.3 per cent. being heavily infected, 18.9 per cent. showing only an occasional colony on the plates.[5] All were apparently healthy.

If these observations, made on a representative company, may be used as an index, a high percentage of soldiers in the depot brigade harbor *S. hemolyticus* in their throats. The question naturally arises, Do these men come from civil life as carriers, or do they acquire the organism in camp? The recent draft afforded an exceptional opportunity for determining this point. Throat swabs were taken on 489 new recruits, representatives of both urban and rural communities, as they stepped from the train. Of these cultures, 14.8 per cent. showed the presence of hemolytic organisms.[6]

The inference is obvious. It has previously been shown that Camp Taylor is heavily seeded with *S. hemolyticus.* A large number of the men, therefore, acquire the streptococcus carrier state during their sojourn in camp.

SUMMARY

1. Of 388 measles patients admitted to the base hospital at Camp Zachary Taylor, Ky., 299, or 77.1 per cent., were found to be carriers of *S. hemolyticus.*

2. A ward routine was instituted in an attempt to prevent the contamination of noncarriers by carriers in the hospital. All patients were admitted to a special "measles receiving ward," where throat cultures were made. Carriers of the streptococcus and noncarriers were there separated and sent to wards designated, respectively, as "dirty" and "clean." In these wards rigid precautions were observed, the most important of which were cubicle isolation, masking of patients and attendants, guarding of latrines to prevent crowding, the feeding of each patient in his own cubicle and, in the clean wards, supplying orderlies and nurses who, by throat cultures, had been proved noncarriers.

3. Complications occurred in 119 cases in the series (30.6 per cent.); a number of patients suffered from more than one. In order of frequency the complications were: bronchopneumonia, acute tonsillitis, acute bronchitis, acute suppurative otitis media, empyema, acute sinusitis, peritonsillar abscess, erysipelas, cervical adenitis, peritonitis and septic meningits.

4. The complications occurred almost exclusively among streptococcus carriers, the incidence in this group being 36.8 per cent., as contrasted with 6.4 per cent. in "clean" cases. Furthermore, the complications noted among the clean cases were of distinctly minor nature.

5. Bronchopneumonia occurred forty-seven times, or in 12.1 per cent. of all cases, and caused many deaths. Fifteen, or 34 per cent., of the bronchopneumonia patients developed empyema.

6. Cultures of pleural fluids and pus from ear discharges have for the most part shown *S. hemolyticus.*

7. Of 326 carriers, 211, or 63.2 per cent., have had no complications.

8. Even while observing the precautions outlined, "clean" patients became contaminated when a ward was "mixed," that is, filled half with carriers, half with noncarriers. These observations cast some doubt on the efficacy of the ward measures described.

9. Strictly "clean" wards remain "clean." Therefore, if the incidence of complications in measles is to be reduced, carriers and noncarriers must be separated and cared for in different wards. This procedure should prove particularly valuable in camps where the number of streptococcus carriers among measles patients is low.

10. Attempts at eradicating the carrier state by the use of mouth antiseptics have failed. Of the patients discharged from the hospital, 71.7 per cent. harbored *S. hemolyticus* in their throats.

11. Throat cultures were made on ninety-five men of a representative company in the One Hundred and Fifty-Ninth Depot Brigade, the organization from which came 89.1 per cent. of measles patients in this series. Seventy-nine, or 83.2 per cent., of the men in this company, though apparently healthy, were carriers of *S. hemolyticus.*

12. Throat swabs taken on 489 new recruits as they stepped from the train showed the incidence of streptococcus carriers to be 14.8 per cent.

13. A large number of the men at Camp Zachary Taylor, therefore, apparently acquire the streptococcus carrier state during their stay in camp.

The Sources of Energy.—The work of the world is accomplished in largest part by the oxidation of carbohydrates, that is to say, of sugars and starches. Bread, corn, rice, maccaroni, cane sugar, these are par excellence the food fuels of the human machine. In the dinner pail of the laborer they testify as to the source of his power. They are convertible into glucose in the body, which glucose gives power to the human machine. They may be used for the production of work without of themselves increasing the heat production of the worker, as happens after meat ingestion.—Lusk, Food in War Time.

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[4] Alexander, H. L.: Hemolytic Streptococcus Causing Severe Infections at Camp Zachary Taylor, Ky., The Journal A. M. A., March 16, 1918, p. 775.

[5] At Camp Custer, Battle Creek, Mich., Irons and Marine, during a period of respiratory infections, made a large number of throat cultures on selected companies. Hemolytic streptococci were found in about 70 per cent. of apparently healthy soldiers.

[6] The circumstances under which these cultures were taken made it impossible to d[illegible]ne the colonies further.

PROCEEDINGS OF THE CHICAGO SESSION

MINUTES OF THE SIXTY-NINTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT CHICAGO, JUNE 10-14, 1918

HOUSE OF DELEGATES

First Meeting—Monday Morning, June 10

The House of Delegates met in the home of the American Medical Association, 535 North Dearborn Street, and was called to order at 10 a. m. by the Chairman, Major Hubert Work, Pueblo, Colo.

Chairman's Address to the House of Delegates

Dr. Hubert Work, Chairman, presented the following address:

To the House of Delegates of the Sixty-Ninth Annual Meeting of the American Medical Association:

Your presiding officer has few recommendations to make and none to urge, holding it to be indelicate at least, to invite legislation on which members of the house might entertain different views.

It is probable that this House of Delegates has not heretofore exercised its initiative function fully as the governing body of the Association. Apparently, it has done so to its own satisfaction and to the sufficient protection of the Association, but while the officers you elect represent you, you in turn represent the profession, which may sometime expect from you closer supervision. Lack of contact breeds distrust, and ignorance of facts encourages groundless suspicions but cooperation of efforts secures the highest success.

The successful career of our Association with the proud position its journal occupies with both medical and lay press, is a tribute to your previous selection of officers, yet I believe that the members of this house should activate their obligations to the Association between annual sessions.

I would remind you of the physical value of this plant, of the money on hand and invested, for which you are responsible; of the importance of this Association to our people at peace, and of its attitude in war. Its journal has become the authentic, quoted roster of the Medical Department of the Army by common consent, and its Military Medical Honor Roll together with its survey published a week ago has not been equaled as foundation work.

By invitation your chairman has attended all trustee meetings. The business methods and exactions of your trustees enforced in this great publishing house would, I believe, appeal to you. The management is alert in medicine, and financial detail is governed by the rules of all trust companies.

An Ad-Interim Committee of the house was proposed a year ago, but not pressed for some reason.

Your Secretary will report the action of a War Committee improvised by your authority to meet an emergency call for help.

The war into which we have been drawn is a war of the chemists. Its motive power, its devices for destruction and its medication of wounds are all chemicals and their combinations. The destructive science of chemistry must kill immediately or the healing aids of chemistry will cure ultimately.

As never before, medicine has proved our faith in it by what it has accomplished. The science we represent has demonstrated to all sects, pathies and unbelievers, its quality by its performance in a world crisis. The profession you gentlemen represent is scattered over the world's greatest domain of human intelligence, yet it sensed the common danger, comprehended it and stood at attention quicker than any other profession, trade or business. Our physicians at home no longer press plans for personal advantage. The ununiformed officers of the Selective Service in every community are indeed our medical reserves. They select our soldiers, carry the burdens of those gone and contribute of their earnings to the support of their dependents—surely, chivalry among physicians was never brighter, or the spirit of self-sacrifice a national asset until now—a by-product of our civilization that lay dormant under the complacency of our prosperity.

Surgeons transplant with impunity, either segments or shafts of bone from parts less important, to restore parts necessary to life and the healing of wounds is measured by hours rather than by weeks. These unplumed Knights of the Scalpel practice a new science of surgery, urged by the cry of necessity which opened to them opportunity.

One year ago when this house was convened it was stated that "thousands of our membership were preparing to follow," into the service of the Army. Thousands have followed and we already know that some have "carried on" beyond the war.

Each week THE JOURNAL first opens at our Gallery of Heroes, whose pictures are set over the inscription "Died in Service, M. R. C., U. S. Army." A simple epitaph; at once a eulogy, a requiem and a benediction. It comprehends preparation and service, to which the great seal of approval has been affixed by the United States of America. It matters not at all when we are called, but the manner of our going fixes the fragrance of remembrance. Our American mothers prefer a breaking heart, with pride of memory, to a living presence that needs an apology.

Although the American mind is sensitized by war, our profession must proceed coherently. The burdens war has imposed on the profession are heavy, but we must also forecast the medical problems of the peace to follow, which will tax every resource of our decimated ranks. Our losses by the hand of time, by casualties and of our premedical students, will lay a heavy hand on us afterward.

No one can now be found to say that we will not win the war or that the United States no longer produces the type of men our nation's history was builded around. The two generals through whom the medical profession serves would alone disprove both hypotheses.

The selective draft, predestined by the pacifist to failure, has proved to be the colossal achievement of the times. The man to accomplish it was already in place and able to envision the future, its contingencies and to sense the aroused American mind. Our people are giving up their sons without protest—and the selective service system has been conceivd in detail and established in entirety.

The Judge Advocate-General, who framed the law and who administers it as the Provost Marshal-General, has written the name of Enoch H. Crowder in history.

In this world's crisis, when we can only live through killing, when every device for destruction is employed as an engine of death, from lethal gas to 70-mile guns; poised, undismayed, with faith in his profession and in the science it employs, with the confidence of his government and the devotion of his profession stands the Surgeon-General of the Army.

While the picture from a magazine's page, hanging by one of a uniformed boy in the humblest home, is that of William C. Gorgas; although years of service may have run against him, the mothers of our soldiers will not consent to his retirement, but will pray that his eyes be not dimmed or his natural forces abated.

The trustees bid me say that, having come home, they hope you will sense the welcome, enjoy the freedom and experience the pleasures which are the dues of those who return after a long absence; and when departing, that you will leave, with your adieus, advice, suggestions and instructions to further direct them in their stewardship.

I declare the House of Delegates now open for business.

Reference Committees

The Chairman announced the following Reference Committees:

SECTIONS AND SECTION WORK

John D. McClean	Pennsylvania
Guy L. Connor	Michigan
Frederick T. Rogers	Rhode Island
Thos. Holloway	Ophthalmology
G. A. Moleen	N. and M. D.

RULES AND ORDER OF BUSINESS

C. R. Scott	Idaho
S. W. Welch	Alabama
E. B. Cooley	Illinois
W. T. Williamson	Oregon
A. F. Richards	Tennessee

MEDICAL EDUCATION

E. A. Hines	South Carolina
J. B. Blake	Massachusetts
Wm. S. Lalor	New Jersey
Robert E. Noble	Army
R. M. Funkhouser	Missouri

LEGISLATION AND POLITICAL ACTION

M. L. Graves	Texas
A. E. Bulson, Jr.	Indiana
George H. Kress	California
Southgate Leigh	Virginia
E. E. Harris	New York

HYGIENE AND PUBLIC HEALTH

J. W. Schereschewsky	U. S. P. H.
H. P. Ritchie	Minnesota
Frederic E. Sondern	New York
C. D. Selby	Ohio
J. R. Morrell	Utah

AMENDMENTS TO CONSTITUTION AND BY-LAWS

F. M. Crandall	New York
C. L. Stevens	Pennsylvania
Rock Sleyster	Wisconsin
Henry E. Odell	Navy
C. P. Meriwether	Arkansas

REPORTS OF OFFICERS

H. G. Wetherill	Gynecology
F. E. Murphy	Missouri
S. R. Roberts	Georgia
Torald Sollmann	Phar. and Ther.
H. B. Gibby	Pennsylvania

CREDENTIALS

D. Chester Brown	Connecticut
James W. May	Kansas
Jos. W. Aikin	Nebraska
M. A. Kelso	Oklahoma
Rudolph Horsky	Montana

MISCELLANEOUS BUSINESS

C. E. Humiston	Illinois
M. N. Voldeng	Iowa
H. A. Royster	North Carolina
D. E. McGillivray	Washington
J. H. J. Upham	Ohio

Reports of Officers

Report of the Secretary

The Secretary presented the following report, which was referred to the Reference Committee on Reports of Officers:

To the Members of the House of Delegates of the American Medical Association:

For the year 1917-18, I submit the following report:

MEMBERSHIP

The membership of the various constituent state associations, which constitutes the membership of the Association, according to the records in the Secretary's office, May 1, 1918, was 80,248, as shown in the accompanying table.

FELLOWSHIP*

The Fellowship of the American Medical Association on May 1, 1917, was 44,010. During the past year, 447 Fellows have died, 2,258 have resigned, 312 have been dropped as not eligible, 521 have been dropped for nonpayment of dues and 54 have been removed from the rolls on account of being reported "not found," making a total of 3,592 names to be deducted from the Fellowship roll. There have been added 4,297 names to the Fellowship roll, of which 3,077 were transferred from the subscription list. The Fellowship of the American Medical Association on May 1, 1918, was 44,715, a net increase for the year of 705.

This gain in the number of Fellows, as in previous years, is due largely to circularizing subscribers to THE JOURNAL who were eligible, urging them to become Fellows.

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* These figures do not include those who are now Fellows by virtue of their being commissioned and on active duty as Medical Reserve Corps Officers but who previously have not been Fellows.

AD INTERIM APPOINTMENT OF COMMITTEES

Under date of Oct. 19, 1917, the following report of the Board of Trustees was submitted by the chairman of the House of Delegates and the secretary to the members of the House of Delegates of the American Medical Association,

TABLE—ORGANIZATION OF CONSTITUENT ASSOCIATIONS

Constituent Association of	No. Counties in State	No. Component Societies in State Assn.	Number Counties in State Not Organized		No. Physicians in State (6th Ed. Directory)	Number Members of State Association		No. A. M. A. Fellows in State	No. Subscribers to Journal in State*
			1917	1918		1917	1918		
Alabama	67	67	...	...	2,530	1,851	1,752	418	225
Arizona	14	11	2	3	333	153	182	122	83
Arkansas	75	62	13	13	2,587	1,103	1,045	376	223
California	59	40	19	19	5,929	2,780	2,862	1,937	891
Colorado	63	24	31	32	1,713	868	874	495	287
Connecticut	8	8	...	...	1,701	1,039	1,067	658	286
Delaware	3	3	...	...	264	101	103	59	28
Dist. Columbia	....	....	...	...	1,237	560	559	394	227
Florida	54	31	20	22	1,296	573	562	221	161
Georgia	152	85	58	58	3,436	1,323	1,415	674	414
Idaho	41	6	12	16	449	154	132	85	118
Illinois	102	98	1	1	10,909	6,057	6,330	3,851	1,858
Indiana	92	86	1	2	4,765	2,418	2,055	1,181	498
Iowa	99	96	2	3	4,004	2,277	2,333	1,225	554
Kansas	105	64	27	33	2,683	1,117	1,633	933	419
Kentucky	120	112	4	7	3,503	2,300	2,146	694	295
Louisiana	64	39	21	23	2,023	805	899	401	275
Maine	16	15	2	1	1,179	753	744	309	123
Maryland [1]	23	21	2	2	2,268	1,200	1,012	673	331
Massachusetts [2]	14	18	...	...	5,870	3,593	3,681	2,117	939
Michigan	83	58	2	1	4,598	3,027	2,738	1,669	509
Minnesota	86	38	3	3	2,548	1,552	1,688	1,133	454
Mississippi	81	47	3	3	1,975	984	400	244	179
Missouri [1]	114	98	11	11	6,063	3,251	3,216	1,363	657
Montana	44	14	25	27	661	323	225	195	152
Nebraska	93	60	24	26	2,237	970	1,146	644	380
Nevada	16	4	13	12	152	52	89	47	35
New Hampshire	10	10	...	...	657	509	521	266	55
New Jersey	21	21	...	...	3,046	1,757	1,793	995	424
New Mexico	28	11	16	17	456	199	147	157	93
New York	62	59	1	1	15,877	8,512	8,470	5,049	2,125
North Carolina	100	78	17	15	2,237	1,262	1,277	430	273
North Dakota	53	14	2	2	604	383	190	267	103
Ohio	88	87	1	1	7,802	4,679	4,353	2,333	939
Oklahoma	77	68	3	9	2,672	1,407	1,466	618	269
Oregon	36	13	3	3	1,128	596	709	249	233
Pennsylvania [3]	67	63	4	4	11,539	6,800	6,928	3,946	1,473
Rhode Island [2]	5	6	...	...	759	446	427	318	103
South Carolina	45	40	3	4	1,237	732	705	358	190
South Dakota	68	9	7	7	646	376	373	229	132
Tennessee	96	65	29	29	3,481	1,675	1,686	605	289
Texas	250	146	70	71	6,236	3,443	3,508	1,486	615
Utah	29	5	23	24	477	259	267	182	108
Vermont	14	11	...	...	639	380	414	162	61
Virginia [4]	100	66	51	34	2,509	1,756	1,767	605	337
Washington	39	19	18	19	1,673	956	965	540	283
West Virginia	55	30	12	12	1,759	793	930	495	242
Wisconsin	71	54	...	...	2,783	2,894	3,001	1,070	496
Wyoming	22	3	15	17	254	117	82	69	70
Misc. (foreign)	....	....	...	...	....	......	......	346	
Alaska	....	....	...	...	....	......	......	4	21
Canal Zone	....	....	...	...	....	82	97	31	23
Hawaii	5	....	...	...	....	79	79	41	31
Porto Rico	7	2	...	...	....	114	113	38	29
Philippine Isl.	....	....	...	...	....	101	92	35	88
Totals	3,036	2,085	571	587	....	81,501	80,248	43,012	19,714
Commissioned Officers[5] and Honorary Fellows								1,673	
								44,715	

* Not including Fellows of American Medical Association.

Note.—The number of members of the different associations stated in this table is in accord with the membership of the several associations as they were reported to the Secretary on May 1, 1918.

The lack of an effective uniform system for reporting the membership of the state associations accounts for whatever discrepancies this table shows and detracts from the value of the statement.

Component societies are those societies which compose the state association. A component society may include one county or more.

1. The state of Maryland has 23 counties and the city of Baltimore; Missouri has 114 counties and the city of St. Louis.

2. These state associations are divided into district societies, and these are listed in the table as component societies. Some of these districts are smaller and some larger than the county, the county lines being ignored.

3. Provision is made for the physicians in each of these counties to join the component society in an adjoining county.

4. Virginia has recently adopted the plan of organization and is now establishing component county medical societies.

5. This figure includes the Medical Corps of the Army, the Navy and the Public Health Service.

and was adopted unanimously by a postal vote, 116 votes having been cast:

Under date of Oct. 13, 1917, Hugh S. Johnson, Lieutenant-Colonel, Judge Advocate, Executive Officer of the Provost Marshal General, acting for the President of the United States and War Department, addressed a letter to the American Medical Association from which we quote:

"We need the active and vigorous cooperation of the American Medical Association. We need the promptest and most thorough action in this regard. Will you not call together a sufficient number of your executive council to authorize this cooperation by the Association, and to consider a definite and concrete proposition which can be presented here, and upon which we can act?"

Specifically, the cooperation desired of the Association is set forth in the following:

"It is planned to establish Medical Advisory Boards, not necessarily integrated with the territorial jurisdiction of either Local or District Boards, but having headquarters with sufficient apparatus and conveniences so located as to be accessible to boards in the portion of the state in which the Advisory Boards are situated. Any case in which the local examining physician has held the registrant disqualified for service (unless the disqualification is obvious) or in which the local physician is in doubt, or in which the registrant feels aggrieved by the decision of the local physician, or where the Local Board or the Government Appeals Agent desires to appeal the findings of the local physician, is to be sent to such Medical Advisory Board for an exhaustive [medical] reexamination upon which the Local Board can proceed to a final determination."

These Medical Advisory Boards will consist of physicians selected for their ability to make thorough and complete physical and mental examinations. This means that the boards shall be composed of specialists competent to make such laboratory and other examinations as may be required. This matter was of such importance and the urgency was so great that, in accordance with the spirit of the recommendation of the Reference Committee on Reports of Officers adopted by the House of Delegates in June, 1917, i. e.,

"We further suggest to the House of Delegates that it formally and officially offer to the government, through adoption of this recommendation, the services and facilities of the American Medical Association for such assistance as may be in its power to render hereafter",

the Board of Trustees, on Oct. 19, 1917, in special session assembled for the purpose of considering the matter, all the members being present, unanimously adopted the following resolutions:

Resolved, That the Board of Trustees, for and on behalf of the American Medical Association, accepts the invitation to cooperate with the Provost Marshal General in the matter presented in the letter of Lieut.-Col. Hugh S. Johnson under date of Oct. 13, 1917.

Resolved, That a committee of three be and hereby is appointed with full power to act in conjunction with the Provost Marshal General in the premises.

The following committee was appointed: M. L. Harris, secretary, Board of Trustees; Hubert Work, chairman, House of Delegates, and E. J. McKnight, member of the Board of Trustees.

Respectfully submitted, by order of the Board of Trustees.

M. L. Harris, Secretary, Board of Trustees.

Later, the Board of Trustees appointed A. R. Mitchell to fill the vacancy on this committee occasioned by the death of E. J. McKnight, and the President of the Association, the Editor of The Journal and the Secretary were added to the committee as ex officio members. The board further extended the functions of the committee by authorizing it to act in cooperation with the Provost Marshal General's Office, the Surgeons-General of the Army and the Navy and such other military officials as may be deemed best in the interest of and for the successful conduct of the war. It is recommended that the House of Delegates, by action taken at this annual session, shall ratify the postal vote adopting the foregoing report of the Board of Trustees and, if it is in accord with the wisdom of the house, that it shall continue this committee with power to act for the Association in all matters pertaining to placing the Association at the service of the government for the war.

Cooperation with the Surgeon-General of the Army

At its annual session last year, the House of Delegates approved the action of the Secretary in offering, on March 29, 1917, the facilities of the American Medical Association to the Surgeons-General of the Army and of the Navy for whatever service the organization could render in support of the federal government in the prosecution of the war. Following the adoption of the recommendation of the Reference Committee on Reports of Officers whereby the House of Delegates "formally and officially" offered "to the government . . . the services and facilities of the American Medical Association for such assistance as may be in its power to render hereafter," an official communication of this action was transmitted to the Surgeons-General of both the Army and the Navy and was acknowledged by each of them.

It may be of interest to enumerate briefly some of the facilities which the Association has at its headquarters and which in accordance with the foregoing action were made available to the offices of these Surgeons-General.

The facilities at the Association's headquarters are unique: they include information regarding the members of the medical profession which can not be found elsewhere. This information consists of complete records of the membership of the organization, of all licensed physicians, of data compiled from various sources, including matters relating to the professional and social standing of the individual physician. Specially, at the Association headquarters there are:

(a) A card index record of the medical students of the United States showing their preliminary education, the medical schools which they are at present attending and the schools at which each of the years of the medical course has been taken. This covers the last seven years.

(b) A biographic card index of physicians giving, in addition to the student record, information concerning the school of graduation, licenses held, hospitals in which they have served as interns, the places at which they have engaged in practice, etc.

(c) A record of the membership of recognized special medical societies and associations, as well as the names of those who have registered in the various Sections of the Scientific Assembly of the American Medical Association. These records provide information regarding the specialty in which each physician is interested or to which he limits his practice. This information is supplemented by statements from physicians themselves regarding their specialty.

(d) A personal file kept in envelopes which contains a vast amount of personal information concerning physicians; this is in the form of newspaper clippings and reports from various sources.

(e) A file in the Propaganda for Reform department of The Journal containing a most complete list of quacks, irregular practitioners, cults, 'pathies, etc.

In its organization the American Medical Association coordinates the constituent state medical associations and their component county and district societies. This organization reaches every part of the country and practically every physician. Its machinery consists among other things of:

(a) The names and addresses, corrected to date, *in type and ready for use* by the Dick Addressing Machine, of the presidents and secretaries of the state, district and county societies—some 5,156 names—making it possible to address any communication to the organized profession without delay. This is the mailing list for the American Medical Association Bulletin, which publication is available for circularizing any extended matter.

(b) When it is desired to reach the individual members of a county society, a list of these members is also quickly available.

Since the beginning of the war, the office of the Association has, as a routine procedure, made available to the Surgeon-General of the Army all its records relative to the applicants for commission in the Medical Reserve Corps. We have received almost daily lists of names of those making application for commission in the Medical Reserve Corps. When the lists were received, the names were card indexed and the cards distributed among specially trained clerks, who looked up all the information we have concerning each individual. If any information was found which called in question the personal or professional character of any of these individuals, the information was transmitted, without comment, to the office of the Surgeon-General. The amount of time and the extent of the work involved can be appreciated only by seeing the records which are assembled here and noting the response which the medical profession of the United States has made to the call of the government. The members of the House of Delegates are urged to avail themselves of the opportunity afforded at this session to acquaint themselves with the workings of the various departments at this office.

Other features wherein the Association has assisted the federal government are set forth in the reports of the Board of Trustees and of the War Committee.

Memorial to Congress

The following memorial was signed in duplicate by seventeen of the general officers of the Association and by 115 of the 130 members of the House of Delegates of the Association, and on January 30 one set was transmitted to the Vice President of the United States, the presiding officer of the Senate, and the other to the speaker of the House of Representatives. Both were duly acknowledged:

> The undersigned officers of the American Medical Association and the members of its House of Delegates, representing the membership of the various state associations of the United States, comprising in excess of 81,000 physicians, respectfully present the following memorial:
>
> Whereas, Section 209 of the War Tax provides that, in addition to the regular income tax and surtax, there shall be a further tax of 8 per cent. on incomes in excess of $6,000 of all professional men; and
>
> Whereas, Such excess tax is unfair, unjust and vicious, in that it imposes a double tax on those who have no invested capital, but whose earned income is the result of mental effort and personal energy, after an expensive education and a long professional experience—in a word, on those whose income is the product of their brains;
>
> Therefore, In behalf of the medical profession of the United States, we respectfully urge the repeal of Section 209.

Reapportionment

The attention of the House is called to By-Laws, Section 3, Chapter I, page 6. This is the year for reapportioning the delegates of the various state associations; the by-law requires that the House of Delegates shall appoint a committee of five on reapportionment of which the President and Secretary shall be members. I suggest that this appointment be made early in the session, so that the Committee may report to the House as promptly as possible.

Other matters in which the office of the Secretary of the Association has been concerned are reported to the House of Delegates from other sources.

Respectfully submitted,

Alexander R. Craig,
Secretary.

Report of the Board of Trustees

Dr. Thomas McDavitt, Chairman, read the following report, which was referred to the Reference Committee on Reports of Officers:

To the Members of the House of Delegates of the American Medical Association:

In the report of the Board of Trustees made to you last June at New York, we expressed the fear that on account of the war our income from The Journal for the year 1917 might be seriously curtailed, unless strict economy was practiced. It was predicted that there would be great falling off in the number of Fellows and subscribers, and urged that we be prepared to meet the new conditions. As a matter of fact, the year 1917 proved to be a successful one—at least so far as The Journal is concerned. Instead of a falling off, there was an actual increase in circulation, as will be noted by tables in the addendum. On Jan. 1, 1917, the number of subscribers and Fellows was 65,661; on Jan. 1, 1918, 67,315—an increase for the year of 1,654. The actual number of copies printed for the year was 3,504,724, or a weekly average of 67,400.

The number of subscribers in foreign parts is increasing year by year. The total foreign circulation on Jan. 1, 1918, was 1,652. There was no gain in Europe for the year, because what little increase occurred in the countries of our allies was overcome by the dropping from the list of subscribers in enemy countries. On January 1 we had 72 subscribers in China, 114 in Japan, 126 in the various South American countries, and 57 in Mexico. There has been a pretty good increase in all these countries since January 1.

One of the tables gives the percentage in each state of physicians who take The Journal. The average percentage for the whole United States is approximately 46. This is an extremely gratifying record considering all things. There are, sad to say, a large number of physicians who regard The Journal as too scientific, although the relative number of these is rapidly decreasing. But the number of those who take The Journal does not represent the number of its readers; in many instances a number of physicians have access to the same copy, and the copies that go to libraries naturally are read by many. As was stated once before, The Journal reaches a larger percentage of the profession and covers its particular field more thoroughly than does any other journal issued for any other class, profession, trade or specialty.

The revenue derived from The Journal for the past year—that is, for dues and subscriptions, as shown in the Auditors' Report, was $318,487.25.

Advertising

Also, contrary to our prediction last year, there was an increase in the receipts from advertising during the year. The total income from this source was $264,996.52, an increase of over $35,000. Considering the standard of the advertising pages of The Journal, the financial returns are gratifying. The fundamental rule governing advertising is that no proprietary or controlled medicine shall be advertised unless it has been investigated by the Council on Pharmacy and Chemistry and accepted for New and Nonofficial Remedies. The same general principle applies to other articles advertised, viz.: the product advertised must be an honest one, and the claims made for it must not be exaggerated. Naturally this results in the loss of a good deal of advertising, but we are sure that it pays to be thus rigid, even from a commercial point of view.

Cooperative Medical Advertising Bureau

The work of this bureau is giving satisfaction and it is appreciated as a good thing by the various state journals. Without exception the state publications which the bureau represents—and it represents all officially owned state journals except the Illinois—are pleased with the results of this cooperative work.

In 1915 the bureau cost the Association $708, and in 1916, $220; while during the past year in addition to earning its expenses and returning a pro rata honorarium to the state journals of $900, it had $203 to apply as a credit for the year 1918.

American Journal of Diseases of Children

This journal seems to be giving satisfaction, at least if we are to judge by the circulation, which now is 2,415. Considering that it is, in a way, a special journal, and appeals only to those who give special attention to pediatrics, this circulation must be regarded as satisfactory.

We regret to say that there was a loss—$254.29—on the Children's Journal last year, as against a gain of $322.38 the previous year. This loss is due principally to an increase in the amount paid for abstracts during the year.

While the regular price of this journal is $3 a year, practically all the subscribers club it with The Journal or The Archives, and pay only $2 annually.

The Archives of Internal Medicine

What is said regarding the American Journal of Diseases of Children will apply to The Archives of Internal Medicine. The circulation of this journal, as of Jan. 1, 1918, was 2,366—an increase of 264 over the preceding year. Here again there was a loss—and a rather serious one, viz.: $1,635.40, as against a loss of $66.52 the preceding year. This loss is accounted for by the increased size of The Archives. The original plan outlined a journal of approximately 600 pages to the volume, or 1,200 pages a year. But the size has been gradually increasing until the number of pages in the two volumes for 1917 reached 2,082. The regular subscription price is $4 per annum—that is for two volumes. As in the case of the American Journal of Diseases of Children, The Archives is clubbed with The Journal or with the Children's Journal, at $3, and practically all of the subscribers receive it at this figure. This, of course, is too low a price if the size of the journal is to be what it is at present. A comparison with other similar publications is interesting.

The *American Journal of Physiology*, the *Journal of Pharmacology and Experimental Therapeutics*, the *Journal of Urology*, the *Journal of Bacteriology* and the *Journal of Immunology* each cost $5 a volume of not to exceed 600 pages, or $10 a year for those which are issued monthly. The last volumes of these journals had, respectively, 600, 562, 580, 646 and 592 pages.

While the Board of Trustees believes in encouraging these special journals, it is not intended to publish them at an actual loss. The board is considering the advisability of either asking the Editorial Board of The Archives to reduce the number of pages, or increasing the price to $2.50 a volume —$5 a year. If the present clubbing arrangements are continued, this would mean $4 a year for the great majority of subscribers. However, thus far no action has been taken in the matter.

Propaganda Department

The results of the work of this department, so far as it relates to the public, have never been more evident than during the past year. For the first time the inquiries from laymen exceeded in number those from physicians. Possibly this is due to a growing realization on the part of the public regarding the monstrous waste—both in money and in health —connected with the exploitation of worthless or fraudulent medicines.

This department is cooperating with and advising advertising vigilance committees, associations of advertisers and advertising managers of the better class of magazines and newspapers, with the results that those who are behind the scene appreciate that great improvements are taking place in regard to the advertising standard of our leading lay publications. The number of schools and colleges that devote a certain amount of time each session to the economic, sociologic and health phases of the "patent medicine" evil continues to increase. This doubtless is due to the fact that some of the high school and college textbooks on home economics and on hygiene and physiology touch on these subjects and either use the Propaganda's publications or give them as references for supplementary reading and study. The Educational Posters prepared by the department are becoming widely used in such work.

Council on Pharmacy and Chemistry

The war naturally has influenced the work of the Council on Pharmacy and Chemistry and, to a less extent, that of the Chemical Laboratory. Since the war started, no new synthetics or preparations of any kind have been submitted from Germany. Before that time not a month passed that Germany did not send at least one new synthetic or other drug. The value of the Council's endorsement has been recognized by the drug and chemical concerns abroad, and these concerns submitted to the Council practically every product at the outset.

Meanwhile radical changes have been taking place in this country. A large number of synthetics for which we formerly depended entirely on Germany are now being manufactured in increasing quantities by American concerns. Four concerns are now making arsphenamin to take the place of salvarsan, and such products as atophan, veronal, novocain, phenol and phenol derivatives—salicylic acid, the salicylates and particularly acetylsalicylic acid (aspirin), etc., also are being made here. To protect both the public and the profession, as well as to encourage the American manufacture of synthetics, the Council and the Laboratory have willingly investigated the quality of these substitutes for foreign made goods, and when they have been found satisfactory—which has been the case in practically every instance—have accepted them for New and Nonofficial Remedies. Certain members of the Council have been cooperating with the Federal Trade Commission in solving the problem connected with licensing manufacturers to make certain products controlled by German patents.

At the request of the head of the division of supplies in the Surgeon-General's Office, the Committee on Therapeutic Research and Useful Drugs of the Council held a meeting in Chicago, April 26 and 27, to investigate and make recommendations regarding deletions from, and additions to, the list of drug supplies for the Army. Constituted as this committee is, it is thoroughly competent to do this work, and we believe it has been appreciated by the Surgeon-General.

Committee on Scientific Research

In 1900 a committee on Scientific Research was constituted. This committee was continued until 1914 when, in the curtailment of expenses, it was found necessary to discontinue making the annual appropriation for its work. Conditions now are such that the board has felt justified in reestablishing this grant. The committee as newly constituted consists of: Dr. Ludvig Hektoen, Professor of Pathology at Rush Medical College, Chicago; Dr. G. N. Stewart, Professor of Experimental Medicine, Western Reserve University, Cleveland; Dr. A. W. Hewlett, Professor of Medicine, Leland Stanford Jr. University, Berkeley, Calif.; Col. F. F. Russell, Surgeon-General's Office, Washington, D. C.; J. W. Churchman, Professor of Surgery, Yale University, New Haven, Conn., and Herbert Charles Moffitt, Dean and Professor of Medicine, University of California, Medical School.

Disposition of Lawsuits

The active work of the Association in codifying and supplying to the profession and the public information concerning quackery, fraudulent medicines and low-standard medical colleges naturally has resulted in attempts on the part of those affected by such disclosures to intimidate the Association by instituting, or by threatening to institute, lawsuits. It costs very little to institute such suits, and they may be considered as good advertising. Further, they give a semblance to a claim that unwarranted statements have been made. The fact that these cases are practically never pushed to trial, evidences the care the Association takes in determining the accuracy of the information it publishes.

During the past year the followng cases have been disposed of:

In the Circuit Court of Cook County, Ill.:

Julian J. Meyer *vs.* American Medical Association. Alleged damage, $100,000.00.

Organic Chemical Manufacturing Co. *vs.* American Medical Association, and Dr. George H. Simmons. Alleged damage, $100,000.00.

S. Lewis Summers *vs.* American Medical Association, and Dr. George H. Simmons. Alleged damage, $100,000.00.

In the Superior Court of Cook County, Ill.:

John S. Waterman *vs.* American Medical Association. Alleged damage, $100,000.00.

T. Leacraft Hein *vs.* American Medical Association. Alleged damage, $100,000.00.

The cases of Julian J. Meyer, John S. Waterman and T. Leacraft Hein, all physicians, are the result of the exposure in The Journal of the Friedmann Consumption Cure fake. The other two cases, that of the Organic Chemical Manufacturing Co. and of S. Lewis Summers, are to all intents and purposes identical, since S. Lewis Summers is the president of, if not the Organic Chemical Manufacturing Co. These cases were virtually thrown out of court without trial.

The case entitled "People of the State of Illinois on the relation of Maclay Hoyne, State's Attorney, *vs.* W. W. Grant, Frank J. Lutz, Oscar Dowling, W. T. Sarles, Philip Marvel, Philip Mills Jones, M. L. Harris, W. T. Councilman and Thomas McDavitt," was finally reached and was passed on by the Supreme Court in favor of the American Medical Association. The following is the legal history of the case:

In the latter part of 1910, Dr. G. Frank Lydston applied to John E. W. Wayman, then the State's Attorney of Cook County, Illinois, to bring *quo warranto proceedings* against the Trustees of the American Medical Association to oust them from office because they were elected at meetings held outside of the state of Illinois, and because he alleged that the by-laws for the election of delegates to the House of Delegates were contrary to the laws of Illinois. The State's Attorney declined to bring the *quo warranto proceedings.* Dr. Lydston then applied to the Attorney General of the State of Illinois to bring such action in *quo warranto* against the Trustees. The Attorney General also declined to file such a proceeding because the principal office of the American

Medical Association was in Chicago, and for the further reason that the State's Attorney had declined to bring the action.

On April 28, 1911, Dr. Lydston, claiming to act on behalf of the People of the State of Illinois, filed a petition in the Circuit Court of Cook County, Illinois, General No. 305366, against John E. Wayman, State's Attorney, for a *writ of mandamus* to compel the State's Attorney to sign a petition in *quo warranto* to oust the then Trustees from office.

To that petition the State's Attorney filed a demurrer.

On May 18, 1911, the Circuit Court, after extended argument, sustained the demurrer of the State's Attorney and dismissed the petition at relator's cost. Dr. Lydston thereupon prayed and was allowed an appeal to the Appellate Court.

On Oct. 2, 1911, the case was docketed in the Appellate Court of Illinois.

On Oct. 7, 1911, Maclay Hoyne, the then State's Attorney, was substituted for Mr. Wayman.

On Oct. 9, 1913, the Appellate Court, by a divided court, two judges to one, reversed the judgment and remanded the case to the Circuit Court with directions to overrule the demurrer.

By stipulation of the parties the Appellate Court thereafter set aside its judgment, overruled the demurrer which had been sustained by the court below, entered a final judgment awarding a *peremptory writ of mandamus* commanding the State's Attorney of Cook County to sign the information in the nature of a *quo warranto*, and awarded a certificate of importance to the Supreme Court. That state of the record, it was supposed, permitted the State's Attorney to carry the case to the Supreme Court of Illinois.

At the December term, 1913, the State's Attorney filed the record of the case in the Supreme Court and the case was argued at that term.

Feb. 21, 1914, the Supreme Court filed its opinion to the effect that the Appellate Court did not have the power to award a *peremptory writ of mandamus*, and remanded the case *to the Appellate* Court to enter a judgment reversing and remanding the cause to the Circuit Court.

On July 15, 1914 the case was redocketed in the Circuit Court, and on the same date, in obedience to the direction of the Appellate Court, *the demurrer to the petition was overruled.* From that judgment an appeal was taken by the State's Attorney to the Appellate Court. On the call of the case there, it was reargued before a branch of that court different from the one which had made the previous decision.

On Oct. 6, 1915, the second branch of the Appellate Court decided that they were bound by the first decision in that court and affirmed the judgment of the Circuit Court.

On Dec. 20, 1915, the State's Attorney made an application to the Supreme Court for a *writ of certiorari* to review the judgment of the second branch of the Appellate Court, but the Supreme Court denied the writ.

Thereupon, in pursuance of said judgment of the Appellate Court, and on June 27, 1916, the People of Illinois, on the relation of Maclay Hoyne, State's Attorney, filed a proceeding in the nature of *quo warranto* in the Circuit Court of Cook County, Illinois, General No. B-22003 against Drs. W. W. Grant, Frank J. Lutz, Oscar Dowling, W. T. Sarles, Philip Marvel, Philip Mills Jones, M. L. Harris, W. T. Councilman and Thomas McDavitt, Trustees, as defendants, charging that the said Trustees were illegally holding office because elected outside the state of Illinois, under by-laws which were alleged to be illegal under the laws of the state of Illinois. (At this point the American Medical Association is technically brought into the case for the first time.)

On Nov. 13, 1916, a demurrer to the petition in *quo warranto* was filed on behalf of all the Trustees.

On Dec. 16, 1916, after extended argument, the Circuit Court sustained the demurrer of the Trustees.

The People, by the State's Attorney, thereupon perfected their appeal from said judgment to the Appellate Court sitting at its March term, 1917.

After the presentation of printed briefs and upon oral arguments in November, 1917, and full consideration, the Appellate Court filed an opinion, two judges to one, affirming the Circuit Court judgment sustaining the dermurrer, and at the request of The People granted a certificate of importance to the Supreme Court. Such certificate of importance permitted an appeal to the Supreme Court of Illinois.

Thereupon such appeal was taken by the People and came on to be heard upon printed briefs and oral argument at the February term, 1918, of the Supreme Court.

On April 17, 1918, the Supreme Court filed its opinion affirming the judgments of the Appellate Court and of the Circuit Court in the *quo warranto proceedings*, which gave judgment against the People of the State of Illinois and in favor of the Trustees.

This is the first decision by our Supreme Court on the question of whether a corporation not for profit may hold its annual meetings outside of the state of Illinois for the election of its Trustees. The Supreme Court also sustained the by-laws of the Association, which fixed the method of electing delegates to the House of Delegates, and the election of the Trustees by the House of Delegates instead of by the membership at large.

The Appellate Court in a *mandamus proceeding* against the State's Attorney, once decided that such meetings were illegal, but such decision was wholly unauthorized for the reason that it was made in mandamus proceeding, seeking to compel the State's Attorney to sign a petition in *quo warranto.* Under the last decision by another branch of the Appellate Court, the latter held, by a divided court, as above stated in the *quo warranto proceeding*, that the earlier decision of the Appellate Court was not *res adjudicata*, and was not a correct interpretation of the Illinois statute, and affirmed the judgment of the Circuit Court sustaining the demurrer of the Trustees to the *information in quo warranto*, which decision of the Appellate Court is now affirmed by said decision of the Supreme Court.

The Supreme Court takes the ground that, first, the Appellate Court was right in its judgment in the mandamus action in ordering the State's Attorney to sign the information in *quo warranto;* and second, that it was in error in undertaking to pass on the merits which would be involved in the *quo warranto proceedings.* The Supreme Court expresses the opinion further that when it (the Supreme Court) refused a *writ of certiorari* it only intended to agree to the judgment of the Appellate Court directing the State's Attorney to sign the petition in the nature of *quo warranto*, but not to what the Appellate Court said on the merits of the case which would be involved when the questions in that case came before the courts for decision.

That is a most important addenda, since the Appellate Court in its last decision divided on the question whether such earlier decision of the Appellate Court was or was not *res adjudicata* the counsel for the relator, one justice strongly insisting that the Appellate Court's decision in the *mandamus suit* was decisive against the Trustees in the *quo warranto proceeding.*

The decision of the Supreme Court is of great importance to many other nonprofit Illinois corporations which hold annual meetings outside the state of Illinois. Had the earlier Appellate Court decision been sustained, all acts of such associations at meetings held outside the state would necessarily have been illegal and void.

All questions so long litigated in these cases have now been finally set at rest and in favor of the Association. The by-laws are declared to be in conformity with the Illinois laws; the methods of electing Delegates and Trustees are approved as lawful; and the holding of annual meetings for the election of Trustees and the doing of all other business of the Association required to be done under the by-laws at such annual meetings are approved as being in strict conformity with the laws of Illinois.

Addenda to Trustees' Reports

Appended to this report will be found the reports of the Treasurer and Auditors, which speak for themselves. This year, it will be noticed, for the first time in four years, the showing is very satisfactory. This is in part owing to an increased income from advertising, but in part also to the curtailment of some of the Association's work, especially that of the Council on Health and Public Instruction.

The Board of Trustees invested $17,000 in the first Liberty Loan and $23,000 in the second. The option which the first issue of these bonds provided was taken advantage of, namely: they were exchanged for the second issue. Hence the Association has $40,000 of the second Liberty Loan, 4 per cent. bonds. The Board also invested $25,000 in the third Liberty Loan, 4.25 per cent. bonds. Thus it has a total of $65,000 invested in these bonds.

Death of Dr. McKnight

It is with sincere regret, and with the feeling of great loss, that we record the death of Dr. Edward J. McKnight, a member of the Board of Trustees. Dr. McKnight died at his home, in Hartford, Conn., on Christmas Day last, from angina pectoris. While he had been a member of the Board of Trustees only a short time, he had endeared himself to each of the members of the Board. Few men in the medical profession were more highly regarded than he, not alone because of his personalities and his delightful character, but also because he was an earnest, conscientious worker, with a humanitarian interest in his fellow men such as few possess.

War Work

A word as to the part the Association has been taking in the war medical work. In certain quarters there seems to be an idea that the Association has not made use of its opportunities or rendered to the government the service of which it was capable. War was declared April 6, 1917. The Journal for April 7 contained four editorials in which it was stated that war was certain. These editorials emphasized the needs of the Army and of the Navy for medical officers, and called on the medical profession to be ready to respond. The following week it published the facts relative to the number of graduates available from medical colleges, and emphasized the importance of maintaining the supply of physicians through the medical schools. In the issue for April 21 it issued a call to the profession of the United States, through the county societies, to supply the Army with medical officers. In that issue were printed 65,000 blank forms for making application for commission in the Medical Corps, and also in the Reserve Corps, and the announcement was made that the Association was prepared to send pamphlets, circulars and other information regarding the medical service of the Army and of the Navy. In addition to other information regarding the Reserve Corps, The Journal on April 28 published the first list of medical examining boards. On May 26 it again published application blanks—this time 67,000. From this time The Journal carried on a propaganda to build up the Reserve Corps, and in other ways to cooperate with the Surgeon-General's Office of both the Army and the Navy.

In connection with this work there naturally has been a large amount of correspondence. Since the beginning of the war the Association officers have answered, both by letter and by publication, thousands of questions relative to the service, thus relieving the offices of the Surgeons-General of this burden. Besides the application forms contained in The Journal (132,000), the Association has printed and sent out over 60,000 additional forms, or a total of nearly 200,000.

In May, 1917, a proposition was submitted to the Surgeon-General providing for a personal appeal to all physicians under 55 years of age. The plan was endorsed by the Surgeon-General, and Major J. R. McKnight of the Medical Corps was assigned to The Journal office to represent the Surgeon-General and to supervise the work. By detailing an officer for this work, the Surgeon-General made it possible to use franked envelopes and so saved the Association postage charges. The work was begun on May 28, and completed about the end of October. The Association, in addition to supplying the biographical data from its files and records, did the necessary printing connected with the work and furnished other facilities. However, the work was conducted ostensibly by the Central Division of the War Department, in Chicago, which means that the Association was unknown in the work.

The proposition as outlined, and as carried out, required the sending of a circular letter to every physician under 55 years of age. This letter extended an invitation to the one addressed to apply for commission in the Medical Reserve Corps, and was signed by Major McKnight, representing the Medical Corps. A card was enclosed—with a return franked envelope—on which the recipient was asked to give certain information regarding himself, his social conditions, and whether he would apply for commission at that time, or later—in the latter case when. An application blank and all the information necessary, including a list of examining boards, also was enclosed. To those physicians who did not answer, a second letter was addressed. All told—including the first letter and the follow-up—68,597 letters were sent out; and up to the time Major McKnight was relieved, returns had been received from 34,479 physicians. These replies are still coming in.

In his final report to the Surgeon-General, Major McKnight said:

> "In following this work and noting the number of applicants for commissions in the Medical Reserve Corps, we have seen a marked increase in these applicants reported from the different states immediately following the mailing of letters to the physicians of those states. This increase was noted to follow the mailing of both the first and second letter.
>
> "This work, which has been conducted in connection with the American Medical Association and in cooperation with Major Simmons, will be completed in a few days, with the exception of the delayed replies and certain letters of inquiry on subjects related to the Medical Reserve Corps. . . .
>
> "The American Medical Association have not only placed their files at our disposal for this work, but have rearranged their card system from time to time for our convenience, have furnished all materials other than the franked envelopes, have done all the printing and rendered every possible assistance in a most admirable manner."

In addition to this effort to increase the Reserve Corps, the Association's plant has printed a large amount of material without cost to the government. In a word, from the beginning of the war all the facilities of the Association, including its biographical information, its printing plant—everything—have been at the disposal of the Surgeon-General's Office, and every aid possible was rendered him.

As regards this point, the following letters from Surgeon-General Gorgas, dated February 22, bear witness. The first is addressed to the chairman of the Board of Trustees; the second, to the Secretary of the Association.

> *Dear Doctor McDavitt:*—In answer to your letter dated Feb. 14, 1917, I am very glad to acknowledge the great service which the American Medical Association has given, with and without solicitation, to me personally and to the Office of the Surgeon-General, in the solution of the important problems of preparedness for war and of the medical and surgical care of our boys in training camp and field by the Medical Department of the Army.
>
> Through the officers, The Journal and educational propaganda distributed by the American Medical Association, we have secured thousands of officers of the Medical Reserve Corps. The Office of the Surgeon-General and the Medical Department of the Army still need your aid and support.
>
> Permit me to thank you and through you the other trustees and officers of the Association for the valuable help already rendered and for the acceptable offer of a continued life service.

> *Dear Doctor Craig:*—It gratifies and affords me pleasure to acknowledge the great services rendered by the American Medical Association, to me personally and to the Office of the Surgeon-General, in organizing the Medical Department of the Army for the efficient care of our soldiers in training camp and field.
>
> Since April, 1917, the Board of Trustees, the officers at the Chicago headquarters, The Journal and all the machinery of the American Medical Association have been important and distinctive factors through which many thousands of physicians have been influenced to apply for commissions in the Medical Reserve Corps; medical officers have received valuable instruction by means of special articles printed in The Journal and also through literature distributed in pamphlet form from the office; and in other ways too great to enumerate here.
>
> The spirit of service expressed by the officers and members of the American Medical Association in so many helpful ways, in the work of preparation for war and for actual surgical and medical care of our soldiers in war, evidences a patriotism and devotion to country which is a credit to the American medical profession.
>
> I accept and thank you and through you the other officers of the Association for the offer to continue the same services of the Association to the Medical Department of the Army as long as may be.

On October 13, on invitation of the Provost Marshal-General's Office, the general manager held a consultation with Colonel Johnson and Major—now Colonel—Easby-Smith relative to establishing medical advisory boards in connection with the carrying out of the selective service regulations. Supplementary to this conference the following letter was received from the Provost Marshal-General:

WAR DEPARTMENT
Office of the Provost Marshal-General
Washington, D. C., Oct. 13, 1917.

Dr. G. H. Simmons,
Cosmos Club,
Washington, D. C.

My Dear Dr. Simmons:

There is, in course of preparation, new regulations governing the draft. These new regulations put into effect a plan built on principles that constitute a radical departure from anything that has been done before. In brief, it is proposed to inquire into the economic, family, and industrial relations of every person liable to military service. This is to be done by means of an exhaustive questionnaire which every registrant is required to submit to his Local Board. On receipt of the questionnaires of all registrants, the Local Board will proceed to classify all registrants in five classes, arranged in the order of their availability for military service. Classes two, three, four and five are, for all substantial purposes, temporarily discharged from the draft. Class one, alone, is immediately available for military service. Class one is composed largely of single men, and those whose relation to industry and agriculture is such that they can be taken without disturbing the economic interests of the nation.

The question of determining the physical fitness of registrants is not the least of our difficulties. In the proposed scheme it would be futile and unwise to examine those registrants who are in deferred classes. Our problem, then, is to provide immediately for the physical examination of Class one.

Under the plan for physical examination in effect for the first draft, an examining physician attached to a Local Board examined registrants before the list had been culled by exemption and discharge. If the examination resulted in a finding of physical disqualification, the registrant was reexamined by another physician. If both physicians found him disqualified, he was ordinarily discharged from draft.

This system left much to be desired. Examinations were made most hurriedly in the absence of proper apparatus. Sometimes enormous personal pressure was brought to bear on the discretion of the physican, and while no single case of improper conduct has arisen, it is not in the nature of things that, in the close relation between local physicians and their clientele, impartial consideration was not in some instances clouded. The system is not fair to the examining physician, nor to registrants, nor to the government.

It is proposed to cure this fault. It is planned to establish Medical Advisory Boards, not necessarily integrated with the territorial jurisdiction of either Local or District Boards but having headquarters with sufficient apparatus and conveniences so located as to be accessible to Boards in the portion of the state in which Advisory Boards are situated. Any case in which the local examining physician has held the registrant disqualified for service (unless the disqualification is obvious) or in which the local physician is in doubt, or in which the registrant feels aggrieved by the decision of the local physician, or where the Local Board or the Government Appeals Agent desires to appeal the findings of the local physician, is to be sent to the Medical Advisory Board for an exhaustive reexamination on which the Local Board can proceed to a final determination.

We are going to strive to give this great sifting and classification of registrants definition as a National effort in the accomplishment of which we hope to have the President call upon every citizen to assist according to his qualifications and talents. Our problem as to the Medical Advisory Boards is, I think, one of organization. The system of Advisory Boards must, if it is to be effective and if it is to be given an official status, be 100 per cent. perfect. In order to accomplish this it is necessary to have at each state headquarters some person, I think a physician, who will be responsible for the prompt, scientific and efficient organization of the state. His problem will be to consider the transportation difficulties, to locate an Advisory Board in places within his state where there are proper apparatus and conveniences, to select and to recommend to the governor, or it may be to the President, the personnel of each of such Boards. In short, he must envision his state as a system, and must create the working boards of that system. It has been suggested that a physician in the Medical Reserve Corps in each state should be called to active service, given an official status in supervision of Medical Advisory Boards, and possibly of local examining physicians within the state. I like this. I think it is practicable. I am inclined to believe that it is the only way to obtain a responsible person in each state to whom we can look for efficient organization.

We need the active and vigorous cooperation of the American Medical Association. We need the promptest and most thorough action in this regard. Will you not call together a sufficient number of your executive council to authorize this cooperation by the Association, and to consider a definite and concrete proposition which can be presented here, and upon which we can act?

Yours very truly,
Hugh S. Johnson,
Lieutenant-Colonel, Judge Advocate,
Executive Officer.

In response to this, the Board of Trustees met in special session on October 19. It officially offered the cooperation of the Association and its officers to the Provost Marshal-General in the proposed formation of these medical advisory boards. A committee was appointed, to be known as the War Committee of the Association, composed of: Dr. Hubert Work, chairman of the House of Delegates, as *chairman;* Dr. E. J. McKnight, a member of the Board of Trustees; and Dr. M. L. Harris, Secretary of the Board of Trustees. On the death of Dr. McKnight, Dr. A. R. Mitchell of Lincoln, Neb., a member of the Board of Trustees, was appointed on the War Committee; and the President and Secretary of the Association and the Editor of The Journal, *ex-officio,* were made members of the committee. This committee will make a report covering its work.

Respectfully submitted,

Thomas McDavitt, Chairman,	Oscar Dowling,
M. L. Harris, Secretary,	Philip Marvel,
Wendell C. Phillips,	W. T. Sarles,
A. R. Mitchell,	H. Bert Ellis.

Addenda to Trustees' Report

SUBSCRIPTION DEPARTMENT

The regular weekly issue of The Journal of the American Medical Association, from January 1, 1917, to December 1, 1917, inclusive (52 issues), was as follows:

January 6	66,842	July 7	65,457
January 13	66,412	July 14	65,606
January 20	64,531	July 21	65,564
January 27	65,299	July 28	65,603
	263,084		262,230
February 3	65,379	August 4	65,249
February 10	64,641	August 11	65,801
February 17	64,522	August 18	66,646
February 24	64,561	August 25	66,597
	259,103		264,293
March 3	66,242	September 1	72,017
March 10	64,434	September 8	70,207
March 17	65,190	September 15	72,459
March 24	65,098	September 22	72,582
March 31	64,873	September 29	72,773
	325,837		360,038
April 7	66,638	October 6	72,862
April 14	65,086	October 13	66,718
April 21	64,615	October 20	70,673
April 28	67,494	October 27	75,670
	263,833		285,923
May 5	72,344	November 3	70,600
May 12	64,845	November 10	66,864
May 19	70,612	November 17	68,031
May 26	67,514	November 24	67,808
	275,315		273,303
June 2	65,897	December 1	67,914
June 9	65,927	December 8	68,525
June 16	65,778	December 15	68,910
June 23	65,671	December 22	68,591
June 30	65,938	December 29	68,614
	329,211		342,554
Total			3,504,724
Weekly average			67,399

PERCENTAGE OF PHYSICIANS RECEIVING THE JOURNAL

This table gives the number of physicians (based on the fifth edition of the American Medical Directory) in the United States, the number receiving The Journal, and the approximate percentage in each state. Copies to physicians in the United States Army, United States Navy, United States Public Health Service, etc., are not included.

State	Number Receiving Journal	Physicians in State 5th A. M. Dir.	Approx. Percentage 5th A. M. Dir.
Alabama	630	2,569	25
Arizona	206	307	67
Arkansas	608	2,637	23
California	2,917	5,687	51
Colorado	814	1,733	47
Connecticut	998	1,678	54
Delaware	92	261	35
District of Columbia	593	1,482	40
Florida	400	1,321	30
Georgia	1,092	3,421	32
Idaho	212	439	48
Illinois	5,902	10,648	55
Indiana	1,734	4,872	36
Iowa	1,786	3,751	48
Kansas	1,322	2,683	49
Kentucky	1,042	3,584	29
Louisiana	665	2,060	32
Maine	461	1,205	38
Maryland	1,020	2,292	45
Massachusetts	3,194	5,869	54
Michigan	2,294	4,360	53
Minnesota	1,668	2,447	68
Mississippi	416	2,048	20
Missouri	2,085	6,399	31
Montana	361	636	57
Nebraska	1,071	1,911	56
Nevada	83	154	54
New Hampshire	349	690	51
New Jersey	1,442	3,239	45
New Mexico	230	430	53
New York	7,486	15,670	48
North Carolina	737	2,102	35
North Dakota	371	586	63
Ohio	3,457	8,045	43
Oklahoma	891	2,634	34
Oregon	488	1,187	40
Pennsylvania	5,705	11,502	50
Rhode Island	457	772	59
South Carolina	517	1,399	37
South Dakota	371	676	56
Tennessee	984	3,457	28
Texas	1,987	6,240	32
Utah	284	465	63
Vermont	240	668	36
Virginia	963	2,547	38
Washington	837	1,695	49
West Virginia	769	1,729	45
Wisconsin	1,599	2,803	56
Wyoming	143	251	57

The following table shows the number of Fellows and subscribers on The Journal mailing list, for each year, commencing with 1900:

Year	Fellows	Subscribers
January 1, 1900	8,445	4,633
January 1, 1901	9,841	8,339
January 1, 1902	11,107	10,795
January 1, 1903	12,553	12,378
January 1, 1904	13,899	14,674
January 1, 1905	17,570	15,698
January 1, 1906	20,826	17,669
January 1, 1907	26,255	20,166
January 1, 1908	29,382	20,880
January 1, 1909	31,999	18,983
January 1, 1910	33,032	19,832
January 1, 1911	33,540	20,504
January 1, 1912	33,250	21,620
January 1, 1913	36,082	19,863
January 1, 1914	39,518	19,751
January 1, 1915	41,254	20,430
January 1, 1916	41,938	22,921
January 1, 1917	42,744	22,156
January 1, 1918	43,420	23,117

During 1917 there were 2,943 names transferred from Subscription Department and 158 from *The Archives of Internal Medicine* and *The American Journal of Diseases of Children* to the Fellowship Department; also 120 from *The Archives* and the *Children's Journal* mailing list to that of The Journal A. M. A., and 56 from The Journal list to *The Archives* and *The American Journal of Diseases of Children.*

The total number of transfers to Fellowship was 3,101.

There were 394 discontinued as Fellows, but continued as subscribers.

TREASURER'S REPORT

Report of the Treasurer of the American Medical Association for the year ended December 31, 1917.

ASSOCIATION RESERVE FUND

Reserve Fund as at December 31, 1916		$120,648.95
Receipts for the year ended December 31, 1917:		
Investments	$ 40,000.00	
Interest	5,587.32	
		45,587.32
Reserve Fund as at December 31, 1917		$166,236.27

TREASURER'S GENERAL ACCOUNT

Balance as at December 31, 1916		$ 3.52
Receipts for the year ended December 31, 1917:		
Transfer from General Working Fund	$ 40,000.00	
Interest on Bank Balances	276.41	
		40,276.41
		$ 40,279.93
Disbursements for the year ended December 31, 1917:		
Transferred to Reserve Fund		$ 40,023.31
Balance as at December 31, 1917		$ 256.62

DAVIS MEMORIAL FUND

Balance as at December 31, 1916	$ 3,440.71
Interest received for the year ended December 31, 1917	103.98
Balance as at December 31, 1917	$ 3,544.69

AUDITORS' REPORT

Chicago, Ill., Jan. 24, 1918.

The Board of Trustees of the
American Medical Association, Chicago, Illinois.

Gentlemen:

In accordance with your instructions, we have audited the accounts of the American Medical Association for the year ended December 31, 1917, and now submit our report thereon.

SURPLUS ACCOUNT

The surplus at the beginning of the year amounted to $382,135.69, and the surplus at the end of the year amounted to $423,433.87, an increase of $41,298.18, which is accounted for as follows:

Net Gain on Operations	$77,303.56
Transfer from Liability Insurance Reserve Fund	4,017.93
	$81,321.49
Less Transfer to Reserve Fund	40,023.31
Net Increase in Surplus	$41,298.18

The net increase in surplus is spread over the assets and liabilities as follows:

Increase in Assets:		
Property and Equipment		$ 1,174.11
Current and Working Assets		43,982.05
		$ 45,156.16
Less Decrease in Prepaid Expenses		489.96
		$ 44,666.20
Less Increase in Liabilities:		
Accounts Payable	$ 4,907.29	
Less Decrease in Advance Payments on Publications	1,539.27	
		3,368.02
Net Increase in Surplus, as above		$ 41,298.18

FINANCIAL POSITION

The financial position of the Association as at December 31, 1917, is shown in the following statement:

Balance Sheet as at December 31, 1917

Assets:			
Property and Equipment at Cost, less Depreciation:			
Real Estate and Buildings			$240,264.09
Machinery			42,875.95
Type and Metals			7,853.72
Furniture and Equipment			13,518.00
Chemical Laboratory			1,564.91
Library			1,278.04
			$307,354.71
Reserve Fund *Investment*			166,236.27
Current and Working Assets:			
Inventory of Materials, Supplies and Work in *Process*		$41,720.59	
Accounts Receivable:			
Advertising	$26,351.58		
Cooperative Medical Advertising Bureau	6,548.47		
Reprints	2,904.45		
Miscellaneous	3,778.62		
		39,583.12	
Notes Receivable		437.74	
Directory, 6th Edition (Labor and Material)		20,252.38	
Cash in Bank and on Hand		23,107.88	
Office Fund		50.00	
			125,151.71
Prepaid Insurance			1,244.18
Total			$599,986.87

LIABILITIES:		
Accounts Payable:		
Cooperative Medical Advertising Bureau	$ 4,412.62	
Sundry	3,210.37	
	$ 7,622.99	
Advance Payments on Publications	2,693.74	
Association Reserve Fund	166,236.27	
Surplus	423,433.87	
Total	$599,986.87	

The balance sheet submitted, in our opinion, correctly reflects the financial position of the Association as at December 31, 1917, subject to provision for accrued interest, taxes and "Journal" subscriptions paid in advance, less subscriptions and memberships due and unpaid.

We examined the securities representing the investment of the Association Reserve Fund, and we found them in order.

We verified the cash on hand by actual count and the cash in bank by certificates obtained from the various depositories. The following is a statement of the cash balances:

Continental and Commercial National Bank	$ 22,546.77
First Trust and Savings Bank (Treasurer's Account)	256.62
Cash on Hand	304.49
Cash Fund	50.00
Total	$ 23,157.88

OPERATIONS

The operations of the Association for the year ended December 31, 1917, are shown in the following statements:

INCOME AND PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDED DECEMBER 31, 1917

JOURNAL:			
INCOME:			
Fellowship Dues		$ 43,569.00	
Subscriptions		274,918.25	
Advertising		264,996.52	
Jobbing		7,349.67	
Books		4,990.84	
Reprints		3,079.21	
Buttons		80.36	
Miscellaneous Sales		8,670.39	
Interest		2,006.07	
		$609,660.31	
Expenses, Schedule "1"		452,692.31	
Net Income from "Journal"			$156,968.00
MISCELLANEOUS INCOME:			
Cooperative Advertising Bureau		$ 203.06	
Directory, 5th Edition		1,608.10	
Rent, Building "B"		300.00	2,111.16
			$159,079.16
Association Expenses, Schedule "2"		$67,972.22	
Less:			
Rentals	$ 3,720.00		
Interest on Treasurer's Account	276.41		
Session	2,918.49	6,914.90	
		$61,057.32	
Miscellaneous Expenses, Schedule "3"		20,718.28	81,775.60
Net Gain on Operations			$ 77,303.56

JOURNAL EXPENSES—SCHEDULE "1"

Wages and Salaries	$158,659.87		
Editorials, News and Reporting	9,815.32		
Paper—JOURNAL Stock	165,966.73		
Paper—Miscellaneous	7,280.61		
Electrotypes	6,691.44		
Binding	216.25		
Ink	5,213.96		
Postage—First Class	15,551.61		
Postage—Second Class	27,924.85		
JOURNAL Commissions	8,649.14		
Collection Commissions	2,650.19		
Discounts	4,147.44		
Express and Cartage	2,800.72		
Exchange	2,673.22		
Office Supplies	609.89		
Telephone and Telegraph	873.43		
Office Jobbing	3,148.90		
Miscellaneous	7,103.90		
Power and Light	3,422.18		
Fuel	3,310.93		
Factory Supplies	4,384.53		
Repairs and Renewals—Machinery	3,623.10		
Bad Debts Written off, Less Recoveries	210.70		$444,928.91
DEPRECIATION:			
Property and Equipment:	Rate	Amount	
Building "B" (New)	2½%	$ 4,289.21	
Machinery	Reinventoried	566.67	
Furniture and Equipment	Reinventoried	1,161.51	
Factory Equipment	Reinventoried	70.60	
Type	15%	691.26	
Metal	20%	984.15	7,763.40
Total			$452,692.31

ASSOCIATION EXPENSES—SCHEDULE "2"

Propaganda		$ 7,930.56
Association		15,657.72
Health and Public Instruction		8,778.34
Pharmacy and Chemistry and Chemical Laboratory		12,998.79
Medical Education		7,200.00
Organization		3,686.54
Therapeutic Research		729.55
Laboratory Depreciation—10%		173.88
Biographical		10,398.80
Building "A" Expense:		
Depreciation, 2½%	$ 388.12	
Sundries	29.92	418.04
Total		$ 67,972.22

MISCELLANEOUS EXPENSES—SCHEDULE "3"

Insurance and Taxes	$ 6,237.03
Legal and Investigation Expense	10,046.16
Building "B" Maintenance	1,534.16
Archives	1,635.40
Children's Journal	254.29
Cumulative Index	691.73
Depreciation on Library—20%	319.51
Total	$ 20,718.28

The audit embraced an exhaustive test of the various sources of income and the verification of the cash disbursements with proper vouchers on file.

We are pleased to report that we found the accounting records to have been kept in the usual good order, and that every facility was afforded us for the proper conduct of the audit.

Yours truly,
MARWICK, MITCHELL, PEAT & CO.,
Chartered Accountants.

Report of the Judicial Council

Dr. Alexander Lambert, New York, *Chairman*, presented the following report of the Judicial Council. This report was referred to the Reference Committee on Amendments to the Constitution and By-Laws.

To the Members of the House of Delegates of the American Medical Association:

There has been presented to the Judicial Council by the president of the University of Minnesota the following contract asking for an opinion whether or not the adoption of this agreement would be contrary to the standards and code of medical ethics of the American Medical Association.

This Agreement made in triplicate this day of January, A. D. 1918, by and between E. C. Kendall, party of the first part, William J. Mayo and Charles H. Mayo, parties of the second part, and University of Minnesota, party of the third part, witnesseth:

WHEREAS, The party of the first part, working under the auspices and in the employment of the parties of the second part, has discovered an agent for the treatment of disease, which has been by him designated "Thyroxin" and has applied for letters patent of the United States thereon, and intends hereafter to apply for letters patent in various foreign countries; and

WHEREAS, It is the desire of all the parties hereto that said substance shall not be commercially exploited for private gain, and that it shall be manufactured and sold with the expressed object of making it available for use in such a way as to do the greatest amount of good for the greatest numbers, and that the same may be dispensed free of charge to patients unable to pay for it;

NOW, THEREFORE, To carry said objects into effect, it is mutually agreed by and between the parties hereto, that the said party of the first part does hereby give, grant and convey unto the said party of the third part the said preparation and trade name and all and every of his rights as a discoverer thereof, and in order further to vest title thereto in said party of the third part, does hereby agree to make, execute, acknowledge and deliver unto said party of the third part so soon as any patent or patents shall be granted unto him, all deeds, assignments and other conveyances necessary to transfer to said party of the third part any and all patents, whether domestic or foreign, which may be hereafter issued to said party of the first part in connection with said discovery, and any and all patents, foreign or domestic, concerning the production of the active constituent of the thyroid, and does hereby further give, grant and convey all his right, title and interest in and to the trade-name hereinbefore set forth.

The said parties of the second part do hereby also give, grant and convey unto said party of the third part all their right, title and interest in and to said preparation and said trade-name.

It is further mutually understood and agreed by and between the parties hereto that said gift is made by said parties of the first and second part, and accepted by said party of the third part, upon the following conditions, to-wit:

1. That the said party of the third part shall cause said preparation or any improvement or alteration thereof to be manufactured and placed upon the market for such monetary return as shall be consistent with making it available for use in such a way as to do the greatest good and render the use thereof most generally available for the benefit of the human race, and may cause the same, when so manufactured, to be distributed without charge to persons who cannot afford to pay for it. The party of the third part shall have the right to grant subsidiary rights and privileges thereunder, either upon royalties or otherwise. The party of the third part agrees that it will use reasonable diligence to utilize said rights as aforesaid, but it is particularly agreed, and the party of the third part accepts said gift only upon the condition, that it shall be sole judge as to what is reasonable diligence in the respect mentioned, and that it shall not be pecuniarily or legally responsible for any want of diligence in such respect unless the same be in bad faith or the equivalent of bad faith, and that in view of the fact that the party of the third part is a public corporation all of whose funds are derived from the public, or held upon trust, the party of the third part shall not be pecuniarily or legally liable under any circumstances whatsoever except to the extent of such rights or the proceeds, profits or returns in its hands at the time of recovery against it.

2. That said party of the third part may annually pay said party of the first part such sums as the party of the third part may deem to be equitable but in no event to exceed in any year 10 per cent. of the net proceeds received by the party of the third part from the sale of the substance in that year; and in the event of the death of said party of the first part may annually pay such sum as said party of the third part may deem equitable to the wife or heirs at law of said party of the first part not to exceed in any year 10 per cent. of the net proceeds received by the party of the third part from the sale of the substance in that year; providing that all such payment to the heirs at law of the party of the first part shall cease when the youngest child of the said party of the first part shall become 21 years of age.

3. That the money which shall have been derived from the sale of this substance shall become part of the funds of the "Mayo Foundation for Medical Education and Research," and except as hereinbefore provided, shall be expended for research into the physical and chemical properties and mode of action particularly of the substance now known as Hormones in the animal organism, and generally, into the physical and chemical properties and mode of action of the substances now known as Enzymes.

4. The expenditure of the funds so derived shall be under the direction of an Executive Committee consisting of three men engaged primarily and directly in research work, which said committee shall be appointed by said party of the third part. Members of the said Committee shall each be appointed for a term of six years and shall be eligible for reappointment. The first appointees, however, shall serve as designated in their appointments for terms of two, four and six years respectively. Any member of said committee may be removed upon recommendation of two-thirds thereof and upon a vote, in favor of such removal, of the majority of the Regents of said party of the third part.

5. Should it at any time be decided, by the vote of two-thirds of said Executive Committee, concurred in by the vote of a majority of said Board of Regents, that it shall no longer be desirable to continue such research work along the lines hereinbefore set forth, and that the same shall be permanently abandoned, then, and in that event, all of the funds then on hand arising from the sale of said preparation, and all funds which may thereafter arise therefrom, shall become and be part of the funds of said "Mayo Foundation for Medical Education and Research" and be administered in accordance with the contract relating thereto heretofore entered into by the said parties of the second and third part.

In Testimony Whereof, The said parties of the first and second part have hereunto set their hands and seals; and the said party of the third part has caused this instrument to be executed by its proper officers and its Corporate Seal to be hereunto affixed the day and year first above written.

This contract is evidently a bona fide agreement proposed to be entered upon between a chemist, two members in good standing in the American Medical Association and a state university conducting a high grade and ethical medical school, the members of the medical faculty of which are members of the American Medical Association.

The Judicial Council must therefore assume and does assume that its official opinion is honestly sought and honestly desired. This is therefore no mere hypothetical question asking for an expression of *opinion which* cannot be considered by the Judicial Council according to its Rules of Procedure (Rule 6, Rules of Procedure and Rules 1 and 2, Methods of Procedure).

On the contrary, this is an agreement which the Judicial Council has discretionary powers to consider since "the Judicial Council may at its discretion investigate general professional conditions and all matters pertaining to the relations of physicians to one another and to the public and shall make such recommendations to the House of Delegates and to the constituent associations as it deems necessary" (Chapter VII, Section 4, last section of By-Laws). The relations of physicians to one another and to the public are questions raised in this agreement and its consideration by the Judicial Council is a proper one whether this be asked for by the public as here represented in the president of a state university, a public institution, or whether this request has come to the Judicial Council at the instance of the physicians who are parties to the agreement. There are no set rules for the exercise of the discretionary power of investigation by the Judicial Council, it alone can decide whether or not such questions as are under discussion shall come before it and how they shall be presented. This agreement under consideration is therefore one properly presented to the Council and over which it has original jurisdiction and which in its discretion it may consider and upon which it may duly make recommendations to the House of Delegates.

This agreement states that E. C. Kendall, an employee, working under the auspices of Drs. William J. and Charles H. Mayo has discovered an agent "Thyroxin" for the treatment of disease and has applied for letters patent of the United States thereon and intends to apply for letters patent in foreign countries. E. C. Kendall agrees to give all patent rights and titles and trade name to the University of Minnesota and the Drs. Mayo agree to give all their rights, titles, etc., in this same medical discovery, to the same university. The university agrees to do all the selling and exploiting of the medical discovery and agrees to give 10 per cent. of the returns to E. C. Kendall and to cover in to the present Mayo foundation fund of the university the remainder and use them for scientific investigations and for the furtherance of scientific study.

From time immemorial it has been unethical for members of the American medical profession to patent medical discoveries and use the proceeds for gain. The Judicial Council is of the opinion that the same standard which applies to individuals must also be conformed to by partnership companies and corporations of which a physician is a member. In other words, a physician cannot escape personal responsibility by making a group of which he is one the agent that acts in a manner in which the physician himself would not act. In recent years, it has been held to be ethical and the Judicial Council has so considered it that any physician could patent a medical discovery and give the patent rights and titles to the trustees of some medical society to hold and not use or exploit for commercial gain. This has been done to prevent the exploitation of the profession and public for personal gain on medical discoveries. The American medical profession has always held it to be more honorable and more in conformity to its high ethical ideals and standards to refuse to burden any medical discovery with the added tax *imposed by patents* and has universally considered that the greatest good to the greatest number could best be obtained by foregoing the patenting and commercial exploitation of medical discoveries for gain. It would not be unethical for the Drs. Mayo to have E. C. Kendall, their employee, and working under their auspices, patent his medical discovery and give these letters patent and patent rights and titles to some medical society to hold and not use for gain. *But it would* be unethical to convey the rights of this patented medicine to any third party to use and commercially to exploit for gain, no matter to what honorable use the commercial proceeds may be put. The ethics of patenting a medical discovery are not overshadowed or affected by the use to which the returns from the sale of the patented medicine may be put.

It is therefore the opinion of the Judicial Council that it would be unethical to consummate this agreement. It would be unethical for the University of Minnesota because it would be unethical for the members of its medical faculty to agree to accept a patent and patent rights which the university proposed to use for commercial gain, just as much so as it would be unethical for these medical *men individually* to patent or accept a patent of a medical discovery and exploit it for personal gain. It would be unethical for the Drs. Mayo on their part to consummate this agreement for they would be patenting a medical discovery and using the commercial proceeds therefrom to increase a fund given by them to the university and it would still be unethical for them to patent the medical discovery and turn over to a third party the commercial exploitation thereof.

It will be recalled that at the Detroit session in 1916, the House of Delegates adopted the following resolution:

Resolved, That the Board of Trustees of the American Medical Association may accept, at their discretion, to hold, to control and to manage, as trustees for the benefit of the people and the protection of the medical profession, such patents on chemicals, remedial or diagnostic substances, medical or surgical instruments or appliances, or anything whatsoever that may be used in the treatment of disease or infirmity and for which a patent may be issued, as the patentee may desire to convey to the American Medical Association for the public protection and benefit; provided, that the patentee shall surrender all claim to remuneration from the royalties or otherwise on such patent or patents to the Board of Trustees of the American Medical Association, which Board of Trustees shall not exact from the manufacturer or producer under such patent or patents, any royalty or other pecuniary compensation or return therefrom, unless, in the judgment of the Board of Trustees, the exaction of such royalty shall appear to be wise and just and for the better protection of the public or the medical profession.

This resolution was substituted for a previous resolution relative to this matter, adopted by the House in 1914, which was as follows:

Resolved, That the Board of Trustees of the American Medical Association shall be permitted to accept, at their discretion, patents for medical and surgical instruments and appliances, as trustees, for the benefit of the profession and the public; provided, that neither the American Medical Association nor the patentee shall receive remuneration from these patents.

According to the resolution now in force, the Board of Trustees, at its discretion, may exact such royalties as "shall appear to be wise and just and for the better protection of the public or the medical profession."

The Judicial Council recommends that the resolution adopted in 1916 be rescinded and that the resolution adopted in 1914 be reaffirmed. It will be noted that the resolution of 1914 empowers the Board of Trustees to protect the medical profession and the public by accepting as trustees patents, provided that neither the Association, nor the patentee receive a remuneration from these patents. This is in accord with the principles of Medical Ethics which states, "It is unprofessional to receive remuneration from patents for surgical instruments or medicine" (Principles of Medical Ethics, Chap. II, Art. 1, Sec. 5).

Respectfully submitted,

Alexander Lambert, Chairman,
A. B. Cooke,
H. A. Black,
Randolph Winslow,
A. R. Craig, Secretary.

Report of the Council on Health and Public Instruction

Dr. Frank Billings, Chairman, read the report of the Council on Health and Public Instruction, which was referred to the Reference Committee on Legislation and Political Action.

The report follows:

To the Members of the House of Delegates of the American Medical Association:

The work of the Council on Health and Public Instruction, like all of our other national activities, has been greatly reduced during the past year on account of war conditions. This is due not only to the absorbing interest of the public mind in problems directly connected with the conduct of the war, but also to the fact that the entire membership of the Council has been actively engaged in public service. Almost immediately after the New York Session in 1917, Dr. Frank Billings, the Chairman of the Council, was sent to Russia as chairman of a special commission. On his return after four months' absence, he was ordered to active service as an officer of the Medical Reserve Corps, first as aide on the staff of the governor of Illinois, then as special adviser to the Provost Marshal-General's office in Washington, and later to the Surgeon-General's Office for the formulation of plans for the care of the crippled and injured soldiers after the war. Dr. Walter B. Cannon of Boston went to France as an officer in the Medical Reserve Corps attached to the Harvard Base Hospital Unit, one of the first medical organizations to be sent abroad. Dr. Wilton Board has been on duty in the Medical Reserve Corps at the base hospital, Camp Zachary Taylor, near Louisville, Ky. Drs. Henry M. Bracken and Watson S. Rankin, the two remaining members of the Council, have been on constant duty as secretaries and executive officers of the boards of health of their respective states and have been cooperating with the federal government in guarding public health interests. The Secretary of the Council was ordered into active service early in August of 1917 and has been on continuous duty as an officer in the Medical Reserve Corps since that time.

Necessarily with all five members of the Council and the Secretary in service, the activities of the Council during the year have been limited to routine work. The Council office at the headquarters building in Chicago has been maintained and operated continuously, and routine correspondence and the filling of orders for educational pamphlets, charts, posters, etc., have been carried on. Owing to existing conditions and the absorption of the public mind in other topics, it has not been considered advisable to undertake any new activities or the development of any new lines of work for the present. As soon as the war is over, the Council will resume its function of public education and stimulation of interest in health topics, public health legislation, etc., with the expectation of finding a public sentiment in favor of organized, concerted and constructive public health work resulting from the educational influence of our military activities greater than has heretofore been possible. The demonstration on a large scale of the effectiveness of modern preventive medicine which has been going on in our camps cannot fail to have a marked influence on public sentiment. The entrance into the service of nearly 20,000 physicians as officers of the Medical Reserve Corps will insure in the future a degree of discipline and cooperation in the medical profession that has heretofore been impossible. The Council confidently anticipates a degree of public interest and of constructive effort along public health lines following the war such as has never before been possible in this country. To meet this situation, it is more than ever necessary that the organized medical profession should be represented in this field by a permanent board capable of carrying on a definite constructive policy, looking toward the development of the largest amount of cooperation between the organized medical profession on the one hand and the general public on the other.

The following tables show the work done by the Council during the past year in the distribution of educational material:

TABLE 1.—NUMBER AND CHARACTER OF PAMPHLETS PRINTED AND DISTRIBUTED, MAY 1, 1917, TO APRIL 1, 1918

Conservation of Vision, Pamphlet III. "Wearing Glasses"		1,000
Conservation of Vision, Pamphlet VIII. "Lenses and Refraction"		1,000
Conservation of Vision, Pamphlet XI. "Infant Blindness, or Ophthalmia Neonatorum"		500
Sex Hygiene. "Chums"		500
Sex Hygiene. "Life Problems"		1,000
Public Health. "Baby Welfare"		7,000
Public Health. "Hookworm"		8,000
Public Health. "House-Fly"		13,000
Public Health. "Measles"		11,000
Public Health. "Pure Water"		2,000
Public Health. "Scarlet Fever"		3,000
Public Health. "Smallpox"		6,000
Public Health. "Typhoid Fever"		4,000
"What You Should Know About Tuberculosis"		97,250
"Save the Babies"		18,000
"Summer Care of the Baby"		1,000
"Health Charts"		5,000
"An Outline for a Study Course on Public Health"		250
Total		179,500
Score Cards	15,000	
Record Sheets	10,000	
Total		25,000
Grand Total		204,500

From May 1, 1917, to April 4, 1918, the Council has received 2,992 and sent 5,622 letters. Requests for information and the sources from which they have come are indicated in Table 2.

TABLE 2.—SOURCES OF REQUESTS FOR INFORMATION

Source	Number
Boards and departments of health	37
Boards of Education	5
Clubs	22
Federal departments	15
Hospitals and sanitariums	14
Libraries	43
Life insurance companies	2
Medical societies	7
Nurses	60
Physicians	251
Publications	16
Universities, colleges, high schools, etc.	78
Y. M. C. and Y. W. C. associations	8
Miscellaneous	787
Total	1,345

The reports of the Chairman of the Committees on Women's and Children's Welfare and on Cooperation with the National Education Association follow.

Respectfully submitted.

FRANK BILLINGS, Chairman,
WALTER C. CANNON,
WATSON S. RANKIN,
HENRY M. BRACKEN,
MILTON BOARD,
FREDERICK R. GREEN, Secretary.

REPORTS OF SUBCOMMITTEES OF THE COUNCIL ON HEALTH AND PUBLIC INSTRUCTION

COMMITTEE ON COOPERATION WITH THE NATIONAL EDUCATION ASSOCIATION

To the Council on Health and Public Instruction:

Your committee charged with coordinating the work of the American Medical Association with that of the National Education Association reports by submitting the following memorandum of a meeting of the Joint Committee at Atlantic City:

1. An increasing number of letters is being received by the chairman of the Joint Committee for the committee reports and for information regarding various aspects of our committee program.

2. Ten thousand copies were printed of our committee third report, entitled "Health Charts." About 8,000 copies of this report have been distributed.

3. A few days before the meeting of the Joint Health Committee at Atlantic City, the chairman of the Joint Committee received a telegram from Mrs. Ira Couch Wood, Director of the Elizabeth McCormick Memorial Fund of Chicago, stating that the trustees of that fund had taken action making available $2,000 for the printing of our health chart sets. Mrs. Wood has suggested or asked, on behalf of the Elizabeth McCormick Memorial Fund, that three charts on Open-Air School and Open-Window Rooms should be printed and distributed with the Health Charts sets of the committee. The additional cost involved in this will be met by the Elizabeth McCormick Memorial Fund.

4. The Joint Committee approved the plan proposed by its chairman for the printing of a fourth pamphlet report to be called "Health Improvement in Rural Schools." This pamphlet report, not to exceed fifty pages, will give information regarding the best health work which is being carried out at the present time in the rural schools of the country. The material for this report is being provided by the generous responses which the chairman has received in answer to 1,072 questionnaires and letters which have been sent out to state superintendents of education, health officers, rural school supervisors, county superintendents, and others who are acquainted with the work in this field.

The concensus of opinion at the meeting of the Joint Committee in Atlantic City expressed itself in favor of the extension of the committee program for the consideration of health problems of the city schools as well as those in the country.

A brief summary of certain activities undertaken under the personal direction of the chairman of the Committee of the Council on Health and Public Instruction is appended:

In southern Colorado, we have kept up the protection of the teeth, eyes and health of the schoolchildren in the rural schools.

In the coal camps, an eye, ear, nose and throat specialist has been examining and treating the schoolchildren of these schools. A dentist and a special nurse are at work among the schoolchildren of the camps, treating and repairing teeth and teaching mouth hygiene.

At these camps, visiting nurses are working who devote their entire time to teaching hygiene and sanitation in the homes of the miners. This work is having a decidedly beneficial effect on the health of the community and does much to improve the schools. Owing to the importance and timeliness of first aid work, we are continuing classes in camps and schools.

The importance of architecture of schoolhouses is not being lost sight of—and whenever possible we speak of the importance of properly constructed schoolhouses, giving the unit schoolhouse as an illustration, with its faultless lighting and ventilation.

Respectfully submitted.

R. W. CORWIN, Chairman.

REPORT OF COMMITTEE ON WOMEN'S AND CHILDREN'S WELFARE

To the Council on Health and Public Instruction:

This last year, the work of our committee has been largely advisory and cooperative, instead of initiative. This has been necessary because of the lack of appropriation and the absence of the majority of the members of the Council, especially the absence of its secretary, Dr. Green. One new feature of the work has been an effort to get the various state fair boards to make provisions for a department of child welfare. The effort has met with a gracious response in all instances and a number have already established permanent departments. At one state fair, alone, 500 babies were measured and scored. A very fair and promising proportion of these were self-competing—that is, children who had entered in 1916, failed to score high because of remediable defects, were worked on according to advice received at the conference, and returned in 1917 to measure their improvement against that of the previous year.

As we have said, the bulk of our work has been cooperative. As chairman of the Child Hygiene Division of the General Federation, it has been possible to come in contact with, and help direct, the plans for child welfare in the women's clubs of the country. In this capacity, we have submitted two lines of work closely allied with the work of the American Medical Association: insistence on adequate vital statistics laws and development and furtherance of baby health conferences. The latter recommendation has necessitated the distribution of the American Medical Association Score Card, Anthropometric Table and Pamphlet No. 7, in addition to bulletins from the federal bureau, and material from the Association for the Study and Prevention of Infant Mortality.

In response to a summons from the Children's Bureau, we met in conference with child welfare workers at Washington, D. C., March 14 and 15, to discuss plans for the children's year. These plans cover three proposed drives: The measuring and weighing of all children under 5 in the United States; the establishment and increase in numbers of public health nurses; and the training of home health volunteers.

As these plans are being executed by the National Council of Defense with the assistance of the General Federation of Women's Clubs and the Parent-Teacher's Associations of the country, they offer a far-reaching field of cooperation. The American Medical Association Baby Welfare Charts, Save the Babies pamphlets and Anthropometric Tables are especially in demand. If the funds were available, and office force sufficient, an unlimited supply of material from our committee would be demanded. It is our keenest regret not to be able to meet that demand in an aggressive way, for wherever permanent stations are established there will be a demand for material and work.

The score card used for the weighing and measuring test is very simple and consequently exceedingly practical for uniform use. It is hoped that in localities where the data secured reveals the need of further investigation such investigation may be made. The Smithsonian Institution of Washington, D. C., and the Iowa Child Research Station have signified their willingness to cooperate in an advisory capacity wherever possible. In this day of reckless expenditure of adult life, we are doubly inexcusable if the rate of infant mortality is not decreased in proportion to the increased destruction of life by war. Organized effort, continuously made, and backed by adequate funds is the only solution of the problem.

Respectfully submitted.

LENNA L. MEANES, Chairman.
M. L. TURNER, Secretary.

Report of the Council on Medical Education

Dr. Horace D. Arnold, Chairman, presented the report of the Council on Medical Education, which was referred to the Reference Committee on Medical Education.

The report follows:

To the Members of the House of Delegates of the American Medical Association:

Fourteen years ago the Council on Medical Education was established and began its efforts to improve medical education in the United States. In 1904 the number of medical schools in this country exceeded the total in all the rest of the world. As to the character of its medical schools, however, this country suffered in comparison with other countries. Medical schools abroad were mainly departments of large universities, liberally financed either by govermental or private agencies. In the United States most of the medical schools were independent and not only met all expenses from student's fees but many actually derived profits from that source. In most European countries entrance requirements were the equivalent of one and a half or two years of work as measured by courses in standard colleges and universities in this country. In the United States, in 1904, only four medical schools were requiring any college work for admission and the large majority were not even requiring a four-year high school education. Medical schools of Europe were mostly supplied with full-time, salaried teachers, including some who devoted their attention to clinical subjects. In 1904, only a few medical schools in this country had any full-time teachers in charge of their laboratory subjects. Most of the medical schools in Europe as well as those of South America were connected with large teaching hospitals. In 1906, in the United States, when the first inspection of medical schools was made, only a small proportion of the medical schools had relationships with hospitals sufficiently large to supply satisfactory clinical teaching material.

Progress in Fourteen Years

During the last fourteen years the situation has been decidedly improved. Largely through the merging of two or more colleges into one in each of many instances the sum total of medical schools has been reduced to what is more nearly the normal supply for this country. Most of the medical schools at present, however, are stronger and better equipped in every way; many of them now compare favorably with the best medical schools abroad, and a score or more are in some respects superior to the very best found anywhere. The advantages in this country at present are the higher and better supervised entrance requirements; larger staffs of well qualified, full-time laboratory teachers; closer relationships with large and well conducted hospitals; and the use of the more modern methods of practical and clinical teaching. Commercialism has been practically eliminated from medical teaching and only a few seriously low grade medical schools continue to exist. Now, as shown in Chart 1, 80 per cent. of the medical schools are requiring for admission two years of collegiate work; the majority have teaching relationships with one or more hospitals in which clinical material is abundant and being used in accordance with the latest methods of teaching.

Importance of Preliminary Education

Of all the improvements enumerated, the one of greatest importance has been the increase in entrance requirements. Without a thorough preliminary education, including a training in physics, chemistry and biology, students would not be able to master the present-day medical course, and would be seriously handicapped, however well equipped the medical school might be with teachers and laboratories. It is noteworthy that the higher admission requirements were adopted voluntarily by the majority of medical schools. In this increase, as a rule, the medical schools were supported by their local state licensing boards, so that now two years of college work have been made an essential qualification for the license in thirty states. This action by the licensing boards also induced certain other medical colleges to go on the higher standard which would not do so voluntarily. Meanwhile, it is those who are interested in medical schools of the latter type who are quick to seize on any pretext to urge a retrogression in entrance requirements, and they have recently been magnifying the country's "dire need of doctors" in the present war emergency, in the hope of securing a retrogression in the entrance requirements of medical schools. As already shown, however, the two-year standard of preliminary education has brought the entrance requirements of medical schools in this country on a par with the essential preliminary qualifications in Great Britain and the other countries of Europe. With the present standards, therefore, Americans need no longer apologize when they speak of medical education in the United States.

Reforms in Medical Education and the War

It is gratifying to know that the reforms in American medical education were so nearly completed before this country was finally drawn into the world war. For the last six or seven years the majority of medical schools have not only been enforcing the higher entrance standards but have also been operating under greatly improved conditions in other respects. The majority of students graduating in the last several years, therefore, have received a medical training equal to the best obtainable anywhere. Furthermore, it is these recent graduates who, in larger proportions, have entered the government medical services and who will be responsible for the medical care of our American soldiers and sailors. It is a matter of congratulation, therefore, that those fighting for the preservation of America and American ideals will have as skilled medical care as those of the opposing armies. This could not have been said had it not been for the energetic campaign of the last fourteen years to improve medical education.

No Dearth of Physicians but an Increased Demand

The war has affected the supply of physicians, even as it has reduced the supply of those in other technical occupations. In recent years also the demand for medical graduates to fill positions as hospital interns, health officers, medical inspectors, medical teachers and other positions of responsibility has been greatly increased. This increased demand is due, not to any scarcity of medical graduates, but to the improved qualifications of those now graduating from our medical schools. In former years this demand did not exist, for the very reason that many of the graduates then turned out were not qualified, educationally or professionally, to occupy the positions now open to them. The increase in the demand has been in direct proportion to the improvements in preliminary and medical education.

Demand for Better, Not Lower, Education

Even for Army purposes the great demand is not so much for ordinary physicians or surgeons as for those of highly technical and special training. Emphatically, therefore, the present demand does not call for a lowering of educational standards, but for the maintenance of present entrance requirements (two years of college work); for further improvements in laboratory and clinical equipment and, particularly, for improved methods of teaching in all medical schools. It is only by maintaining these fair standards that the demand will be supplied, since in the better medical schools, the number of graduates has steadily increased each year for the last five years, while the number graduating each year from the lower grade colleges *has steadily decreased.*

Medical Education for Negroes

One result of the campaign for an improved medical education has been that a generous financial support has been provided for medical schools, either from state appropriations or private sources. The gifts, which at first were of a few thousands of dollars, were soon increased to hundreds of thousands and then to millions, and in recent years gifts of the larger sums have become almost commonplace. These generous gifts indicate the general recognition of the fact that a medical school needs a liberal income in addition to students' fees if it is to furnish a training in accordance with present-day medical knowledge.

In the providing of funds, however, it appears that medical schools for negro students have been largely overlooked, although their need for such support is proportionately greater than for medical schools generally. Now they not only lack this outside financial aid, but also their income from students' fees has been considerably reduced as a result of the general adoption of higher entrance requirements. For these reasons, largely, medical schools for negroes have not been able to keep pace with the rapid improvements made in other medical schools.

TABLE 3.—STATE REQUIREMENTS OF PRELIMINARY EDUCATION

State Examining Board of	One Year of College Work		Two Years of College Work	
	Affects Students Matriculating	Affects All Graduates	Affects Students Matriculating	Affects All Graduates
Alabama	......	....	1915-16	1919
Alaska	1914-15	1918	1918-19	1922
Arizona	1914-15	1918	1918-19	1922
Arkansas	1915-16	1919	1918-19	1922
California	1915-16	1919	......	....
Colorado	1908-09	1912	1910-11	1914
Connecticut	1911-12	1915	......	....
Delaware	......	....	......	....
Dist. of Columbia	......	....	......	....
Florida	1914-15	1918	1918-19	1922
Georgia	......	....	......	....
Idaho	......	....	......	....
Illinois	1915-16	1919	......	....
Indiana	1910-11	1914	1911-12	1915
Iowa	......	....	1911-12	1915
Kansas	1910-11	1914	......	....
Kentucky	1914-15	1918	......	....
Louisiana	1915-16	1919	1918-19	1922
Maine	......	....	......	....
Maryland	1914-15	1918	1918-19	1922
Massachusetts	......	....	......	....
Michigan	1914-15	1918	1918-19	1922
Minnesota	......	....	1908-09	1912
Mississippi	1915-16	1919	1919-20	1923
Missouri	......	....	......	....
Montana	1914-15	1918	1918-19	1922
Nebraska	......	....	......	....
Nevada	......	....	......	....
New Hampshire	1914-15	1918	1915-16	1919
New Jersey	1915-16	1919	1916-17	1920
New Mexico	1914-15	1918	1918-19	1922
New York	1917-18	1921	1918-19	1922
North Carolina	1914-15	1918	1918-19	1922
North Dakota	......	....	1908-09	1912
Ohio	......	....	......	....
Oklahoma	1914-15	1918	1917-18	1921
Oregon	......	....	......	....
Pennsylvania	1914-15	1918	......	....
Rhode Island	1914-15	1918	1918-19	1922
South Carolina	......	....	1916-17	1920
South Dakota	1908-09	1912	1911-12	1915
Tennessee	1916-17	1920	1918-19	1922
Texas	1914-15	1918	......	....
Utah	1913-14	1917	......	....
Vermont	1913-14	1917	1918-19	1922
Virginia	1914-15	1918	1917-18	1921
Washington	1914-15	1918	1918-19	1922
West Virginia	1917-18	1921	......	....
Wisconsin	......	....	1915-16	1919
Wyoming	......	....	......	....

There are about eleven million negroes in the United States and only four negro medical schools. One of these is in Class A; two in Class B and one in Class C. The Howard University School of Medicine at Washington receives only about $5,000 each year—not nearly sufficient to meet its needs—from the United States government, and has access to the large Freedmen's Hospital which is financed by the government. The Meharry Medical College at Nashville in recent years has received a few thousands from private donations and a larger sum to build a small teaching hospital. It is much in need of funds for its further development and maintenance. Still smaller sums have been received by Leonard Medical School, the medical department of Shaw University, which gives only the first two years of the medical course. A few years ago this school discontinued the clinical courses so as to concentrate its efforts on improving the laboratory portion of the school. To show the need of these medical schools it should be stated that, at the lowest estimate, no college can properly teach modern medicine without an income of at least $25,000, in addition to students' fees. This figure should be doubled, if the college is to be even moderately well conducted. These funds are needed to provide more salaried, full-time teachers, more laboratories, more equipment, and to provide for better administration. Furthermore, in the coming requirement of an internship in a hospital as a requisite for the license, increased provision for internships will need to be made for such graduates. This means more hospitals for negroes. Although most of the northern white schools accept negro medical students into their classes, it is difficult to provide them with internships in suitable hospitals. These problems in connection with negro medical education are worthy of careful consideration. No better object could be found for generous donations at the present time than medical schools for the colored race.

Progress in Medical Licensure

Since 1904, the Council has had, as one of its regular functions, the collection and tabulation of statistics which are published in the State Board Number of the *Journal* in April of each year. These statistics have had a large influence in the improvement of both medical education and medical licensure. Four tables published this year are of particular importance and are reproduced in this report. Table 1 has been published with the statistics for each of the last five years and its influence on medical education has been profound. It is based on reports signed by officials of the various boards and shows in what states the diplomas granted by various medical colleges are not recognized as an acceptable qualification for the license. This table has been published each year in the State Board Number of the *Journal*, in the annual report to the House of Delegates and in a pamphlet published for and widely circulated among prospective medical students. Prior to the publication of this table medical students had no way of ascertaining whether or not the diplomas of the colleges they were attending would enable them to secure licenses.

TABLE 4.—ADVANCES IN STATE LICENSE REQUIREMENTS IN FOURTEEN YEARS

Requirement or Provision	States Having Provision for			States Still Having No Provision for
	1904	1918	Increase	
Preliminary Education—				
Any provision for	21	46	25	4[1]
Any standard fixed	18	44	26	6[2]
A standard four-year high school education or higher	7	44	37	6[2]
One year or more of college work	0	38[3]	38	11
Two years of college work as a minimum	0	30[3]	30	19
That all applicants be graduates of a medical college	36	49	13	0
That all applicants undergo an examination for license	45	48	3	1[4]
Requirements of practical and clinical tests in the license examinations	1	5[5]	4	43
Hospital intern year required	0	7[6]	7	42
Full authority by board to refuse recognition to low-grade colleges	14	43	29	6[7]
Boards refusing to recognize low-grade colleges*	5	37	32	11[8]
Reciprocal relations with other states	27	41	14	8[9]
Single boards of medical examiners	36	42	6	7[10]

* In three states, Arkansas, Connecticut and Florida, each of which has three separate boards, only the regular (*nonsectarian*) boards have refused recognition to low standard medical colleges.

1. District of Columbia, Massachusetts, Oregon and Wyoming.
2. Idaho, Nevada and the states named in Footnote 1.
3. See Table 3.
4. New Mexico.
5. The states in which the boards are regularly using practical laboratory and clinical tests in their examinations are Illinois, Minnesota, North Dakota, Ohio and South Dakota. A few other states use practical tests to a greater or less extent but not as extensively or invariably as in the five states named.
6. Pennsylvania, 1914; New Jersey, 1916; Alaska, 1917; North Dakota and Rhode Island, 1918; Illinois, 1921, and Michigan, 1922.
7. District of Columbia, Idaho, Massachusetts, Oregon, Utah and *Wyoming*.
8. Arizona, California, Nevada, Tennessee, Washington and the states named in Footnote 7.
9. Arizona, Connecticut, Florida, Massachusetts, Montana, Oregon, Rhode Island and Washington. To this list should be added the outlying territories of Alaska, Canal Zone, Philippine Islands and Porto Rico, which have no provision for reciprocity.
10. Multiple boards still remain in Arkansas, Connecticut, Delaware, District of Columbia, Florida, Louisiana and Maryland.

Students have actually attended certain colleges for four years, graduated and applied for licenses before they learned that the colleges were not recognized in adjoining states. Besides being a *guide for the prospective medical student*, this table shows what boards are safeguarding the people of their states against the incompetent graduates of low standard medical colleges. Based as it is on strictly official information this table last year was used by the Surgeon-General in establishing a list of "well-recognized" colleges. Unless a college is recognized by the majority of state licensing boards it is not considered as "well-recognized," and its students who are drafted are not permitted to enter the "enlisted reserve corps."

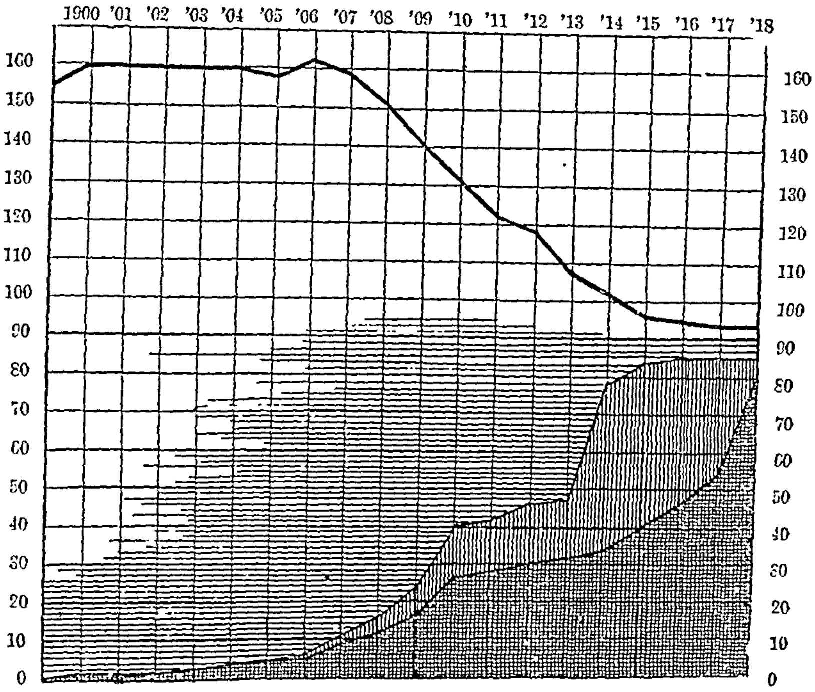
Table 2 shows the classification of the colleges of each physician licensed by examination and reciprocity during 1917. Graduates of medical schools which ceased to exist or which merged with other schools prior to 1907 are included among miscellaneous candidates. Of the physicians licensed by reciprocity, all physicians who graduated prior to 1907, when the Council's first classification was prepared, are included in miscellaneous. Members of the House of Delegates can see just how *many* of the physicians licensed in their respective states during 1917 were graduates, respectively, of Class A, B and C medical schools, and whether the people of those states are being adequately protected against the *output* of low grade colleges.

Table 3 shows that at present thirty-eight states *require one* or two years of collegiate work as a minimum standard of preliminary education and that, of this number, thirty require *two years* of such college work. The twelve states which have not adopted the higher standard are: District of Columbia, Massachusetts and Wyoming, in which as yet no standard has been fixed; Idaho and Oregon, in which the standard is less than a four-year high school education; and Delaware, Georgia, Maine, Missouri, Nebraska, Nevada and Ohio, in which a four-year high school education is the minimum requirement.

Various improvements brought about in medical licensure during the last fourteen years are set forth in Table 4. Next to the improvements in the standards of preliminary education the greatest increase (32) is in the number of states (now 37) which are refusing to recognize low grade colleges. The greatest needs at present are a wider adoption of the requirement of the hospital intern year; a general adoption of the standard of two years of premedical college work, and—a matter of extreme importance—a more general and larger use of practical laboratory and clinical tests in the state licensing examinations. Such tests to a fairly satisfactory extent are now being used in Illinois, Minnesota, North Dakota, South Dakota and Ohio and to a lesser extent in a few other states. An excellent example of how these examinations could be conducted is now being furnished frequently by the National Board of Medical Examiners.

CHART 1.—MEDICAL SCHOOLS AND ENTRANCE REQUIREMENTS

This chart shows (heavy line at the top) the total numbers of medical schools existing in the various years. The chart also shows the numbers of medical schools requiring for admission (horizontal shading, indefinite, estimated) a four-year high school education; (vertical shading) one year of premedical college work and (heavy shading) two years of premedical college work.



	1900	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18
Totals	160	160	160	160	160	158	162	*139*	151	*140*	131	132	*118*	107	*106*	*96*	95	*94*	*94*
Totals (a)	158	158	158	157	156	153	136	148	135	116	91	80	72	60	24	12	10	9	9
Totals (b)	..	..	..	..	..	..	1	2	5	8	13	14	*16*	*16*	44	44	38	31	*6*
Totals (c)	2	2	2	3	4	5	5	9	11	16	27	28	30	31	34	40	47	54	79

Requiring for admission (*a*) a high school education *or less;* (*b*) one year of college work; (*c*) two or more years of college work.

Reference has just been made (see Table 3) to the adoption by state licensing boards of higher requirements of preliminary education. Progress in this particular since 1900 is shown in the accompanying Chart 2. This chart shows just how *many* states in each year had adopted, respectively, a four-year high school education or higher standards of preliminary education. In 1900, only six states had made provision for preliminary education in their practice acts and *in only one* of these was the standard fixed at a four-year high school education *or its equivalent.* Since 1900, wide publicity has been given to the serious conditions in medical education and progress since that time has been rapid. In 1904, the Council on Medical Education advocated two standards of medical education, *one for immediate adoption* which recommended a four-year high school course as the *minimum* entrance requirement and another—the "ideal standard"—*which advocated one year of college work including courses in* physics, chemistry and biology. Colleges and state boards were urged to adopt the latter standard by *Jan. 1, 1908, but* the time was extended till Jan. 1, 1910. By 1910 the number of states providing for preliminary education had increased to thirty-six, in twenty-eight of which *a four-year high school* course was required. The light and heavy dotted lines indicate the number of boards each successive year beginning in 1912, which have *adopted,* respectively, one or two years of collegiate work in addition to a four-year high school education as the *minimum preliminary qualification* for the license in those states. Note that the marked increase occurred in 1914 for the adoption of one year of college work and in 1918 for the two year requirement. These are the years when, respectively, one year and two years of college work were made an essential requirement for admission to Class A medical schools. The increases in the numbers of states *adopting* the higher preliminary standards as indicated by the dotted lines correspond quite closely also with the increases in the numbers of medical colleges which adopted those standards (see Chart 1). The dotted lines show when the requirements affected students *matriculating* in medical colleges. Those requirements did not become effective for all *graduates* until four years later; hence the portions of the chart shown by the vertical and the heavy shading indicate for each year the numbers of states in which, respectively, one year and two years of college work were required of all graduates seeking licenses to practice in those states.

National Board of Medical Examiners

The National Board of Medical Examiners was organized in 1915 and sought the endorsement of the House of Delegates. That matter was referred to the Council on Medical Education for special investigation which was made during the fall of 1915. Further information was brought out in a series of papers read at a joint conference of the Council and the Federation of State Medical Boards in February, 1916. It was found that the personnel of the board consisted of men of high qualifications and that the methods being followed were such as would uphold the standards of education established by the Council and which had been adopted by many of the state licensing boards of the country. On recommendation of the Council, therefore, the National Board of Medical Examiners was endorsed by this body in June, 1916. The personnel of the board at present is as follows: Rear Admiral William C. Braisted, Surgeon-General, United States Navy; Surg.-Gen. William C. Gorgas, United States Army; Surg.-Gen. Rupert Blue, United States Public Health Service; Capt. Edward R. Stitt, Col. Louis A. LaGarde, Assistant Surg.-Gen. William C. Rucker, Dr. Victor C. Vaughan, Dr. Horace D. Arnold, Dr. Austin Flint, Dr. Walter L. Bierring, Dr. Henry Sewell, Dr. E. Wyllys Andrews, Dr. Louis B. Wilson, Dr. Herbert Harlan, and Dr. Isadore Dyer.

Funds to meet the expenses of the board have been provided by the Carnegie Foundation for the Advancement of Teaching, which has given $15,000 per year for that purpose, for an indefinite number of years. This generosity has enabled the board to get its work well started without having to charge examination fees. The only fee for each candidate is $5 for registration.

Recognition of the National Board has already been granted by eleven states and holders of its certificates will be registered without further examination in Colorado, Delaware, Idaho, Kentucky, Maryland, New Hampshire, North Carolina, North Dakota, Pennsylvania, Rhode Island and Vermont. When the permanency of the Board is established and the high character of its examinations is more generally recognized, it is quite probable that its certificate will be recognized by the licensing boards of a larger number, if not of all, states.

The board has held six examinations, the first two in Washington, D. C., held respectively, in October, 1916, and June, 1917; third in Chicago in October, 1917, and the fourth in New York in January, 1918. At these examinations altogether 70 physicians were examined, of whom 54 passed and 16, or 23 per cent., failed. The figures for each of the four examinations are shown in the following table:

Date of Examination	Where Held	Total Examined	Passed	Failed	Percentage Failed
October, 1916	Washington	10	5	5	50.0
June, 1917	Washington	12	9	3	33.3
October, 1917	Chicago	28	22	6	21.5
January, 1918	New York	20	18	2	10.0
Totals		70	54	16	23.0

Two other examinations were held in April at Forts Oglethorpe and Riley, but the final grades have not been received.

EDUCATION PRELIMINARY TO THE STUDY OF MEDICINE

At the annual meeting of the American Medical Association, held in June, 1916, the House of Delegates adopted the recommendation of the Reference Committee on medical education, instructing the Council to not retain in Class A after January 1, 1918, any medical school that was not requiring for admission at least two years of work in a college of arts and sciences approved by the Council or in lieu thereof an equivalent education as demonstrated by the properly conducted examination approved by the Council. The recommendation further stated that two years of college work represented "the highest requirement of preliminary education that should be legally established in this country."

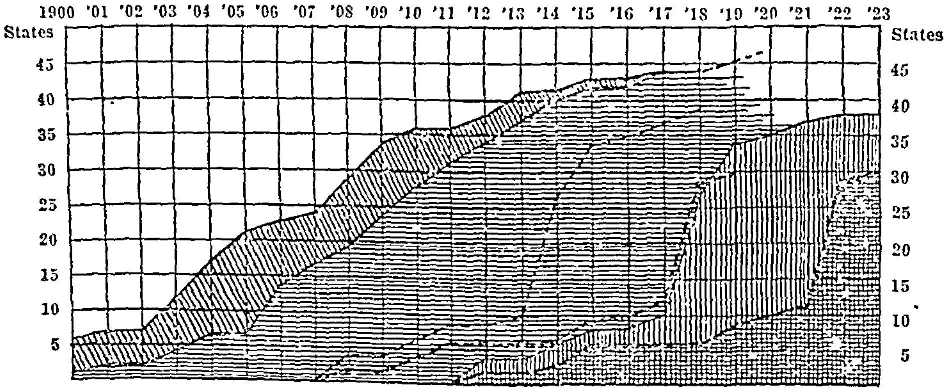
In February, 1917, a special committee was appointed by the Council to study the problem, to suggest a subject content of the two-year premedical college course, and to develop a schedule of the subjects which would best prepare the student for his subsequent medical studies.

CHART 2.—STATE REQUIREMENTS OF PRELIMINARY EDUCATION

As shown by Medical Practice Acts and Board Rules

Showing by years the increased number of states *requiring* (diagonal shading) any preliminary requirement (horizontal shading); a four-year high school education (vertical shading); one year of college work, and (heavy shading) two years of college work.

The light and heavy dotted lines in the horizontal shading indicate, respectively, when the one-year and the two-year requirements were *adopted*—when they began to affect *matriculants* in medical schools. The requirements did not affect *graduates* until four years later, as indicated by the vertical and heavy shading. Each vertical line represents a year as indicated. (Compare this chart with Chart 1.)



	1900	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20	'21	'22	'23
Any req't....	6	7	7	12	18	21	23	24	29	34	36	36	38	41	42	43	43	44	44	?	?	?	?	?
Less than h.s	5	5	5	8	11	14	9	7	10	10	8	5	4	4	2	1	1	..	..	..	..	..	..	..
4 yr. h.s.....	1	2	2	4	7	7	14	17	19	24	28	31	30	33	34	34	34	34	18	..	..	..	..	..
1 yr. coll....	..	..	..	..	..	..	..	..	..	..	..	..	2	2	3	2	2	4	20	25	25	25	9	8
2 yrs. coll...	..	..	..	..	..	..	..	..	..	..	..	..	2	2	3	6	6	6	6	9	10	12	29	30

The committee was made up as follows:

Dr. Kendric C. Babcock, Urbana, Ill., chairman, formerly specialist in higher education of the United States Bureau of Education; now dean of the College of Liberal Arts and Sciences of the University of Illinois and intimately identified with the work of the North Central Association of Colleges and Secondary Schools and the Association of American Universities in standardizing colleges of arts and sciences.

Prof. George Gailey Chambers, director of admissions, University of Pennsylvania, Philadelphia, representing the Association of American Universities.

Dr. W. F. R. Phillips, professor of anatomy of the Medical College of the State of South Carolina, Charleston, representing the Association of American Medical Colleges.

Dr. Theodore Hough, dean of the University of Virginia Department of Medicine, Charlottesville.

Dr. N. P. Colwell, secretary of the Council on Medical Education of the American Medical Association, Chicago.

Although of great importance to medical education, this was a matter which chiefly concerned academic colleges and universities; and for that reason, associations of such colleges were ably represented on the committee. Presidents and deans of such colleges were generally and freely consulted in the study of the problem. A preliminary report of the committee was published in *The Journal* of Aug. 18, 1917.

Following the discussions at the annual conferences of the Council on Medical Education and the Association of American Colleges in Chicago in February, 1918, the committee met and completed its report, which, as finally adopted, is as follows:

I. HIGH SCHOOL REQUIREMENTS

(*a*) For admission to the two-year premedical college course, students shall have completed a four-year course of at least fourteen units (fifteen after Jan. 1, 1920) in a standard accredited high school or other institution of standard secondary school grade, or have the equivalent as demonstrated by examinations conducted by the College Entrance Examination Board, or by the authorized examiner of a standard college or university which has been approved by the Council on Medical Education. Unless all the entrance units are obtained by examination, a detailed statement of attendance at the secondary school, and a transcript of the student's work, should be kept on file by the college authorities. This evidence of actual attendance at the secondary schools should be obtained, no matter whether the student is admitted to the freshman or to higher classes.

(*b*) Credits for admission to the premedical college course may be granted for the subjects shown in the following list and for any other subject counted by a standard accredited high school as a part of the requirements for its diploma, provided that at least eleven units must be offered in Groups I-V:

SCHEDULE OF SUBJECTS REQUIRED OR ACCEPTED FOR ENTRANCE TO THE PREMEDICAL COLLEGE COURSE

Subjects	Units*	Required
Group I, English—		
Literature and composition	3-4	3
Group II, Foreign Languages—		
Latin	1-4	2†
Greek	1-3	
French or German	1-4	
Other foreign languages	1-4	
Group III, Mathematics—		
Elementary algebra	1	1
Advanced algebra	½-1	..
Plane geometry	1	1
Solid geometry	½	..
Trigonometry	½	..
Group IV, History—		
Ancient history	½-1	1
Medieval and modern history	½-1	
English history	½-1	
American history	½-1	
Civil government	½-1	
Group V, Science—		
Botany	½-1	..
Zoology	½-1	..
Chemistry	1	..
Physics	1	..
Physiography	½-1	..
Physiology	½-1	..
Astronomy	½	..
Geology	½-1	..
Group VI, Miscellaneous—		
Agriculture	1-2	..
Bookkeeping	½-1	..
Business law	½	..
Commercial geography	½-1	..
Domestic science	1-2	..
Drawing, freehand and mechanical	½-2	..
Economics and economic history	½-1	..
Manual Training	1-2	..
Music: Appreciation or harmony	1-2	..

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* A unit is the credit value of at least thirty-six weeks' work of four or five recitation periods per week, each recitation period to be not less than forty minutes. In other words, a unit represents a year's study in any subject in a secondary school constituting approximately a quarter of a full year's work. A satisfactory year's work in any subject cannot be accomplished under ordinary circumstances in less than 120 sixty-minute hours, or their equivalent.

† Both of the required units of foreign language must be of the same language, but the two units may be presented in any one of the languages specified.

Of the fourteen units of high school work (fifteen after Jan. 1, 1920), eight units are required, as indicated in the foregoing schedule; the balance may be made up from any of the other subjects in the schedule.

II. PREMEDICAL COLLEGE COURSE

(*c*) Beginning Jan. 1, 1918, the minimum requirement for admission to acceptable medical schools, in addition to the high school work specified above, will be sixty semester hours of collegiate work, extending through two years, of thirty-two weeks each, exclusive of holidays, in a college approved by the Council on Medical Education. The subjects included in the two years of college work should be in accordance with the following schedule:

SCHEDULE OF SUBJECTS OF THE TWO-YEAR PREMEDICAL COLLEGE COURSE

Sixty Semester Hours* Required

Required Subjects:	Semester Hours
Chemistry (a)	12
Physics (b)	8
Biology (c)	8
English composition and literature (d)	6
Other nonscience subjects (e)	12
Subjects Strongly Urged:	
French or German (f)	6-12
Advanced botany or advanced zoology	3-6
Psychology	3-6
Advanced mathematics including algebra and trigonometry	3-6
Additional courses in chemistry	3-6
Other Suggested Electives:	
English (additional), *economics*, *history*, sociology, political science, logic, mathematics, Latin, Greek, drawing.	

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* A semester hour is the credit value of sixteen weeks' work consisting of one lecture or recitation period per week, each period to be not less than fifty minutes net, at least two hours of laboratory work to be considered as the equivalent of one lecture or recitation period.

SUGGESTIONS REGARDING INDIVIDUAL SUBJECTS

(*a*) *Chemistry.*—Twelve semester hours required (eight until Jan. 1, 1919) of which at least eight semester hours must be in general inorganic chemistry, including four semester hours of laboratory work. In the interpretation of this rule work in qualitative analysis may be counted as general inorganic chemistry. The remaining four semester hours (required after Jan. 1, 1919) may consist of additional work in general chemistry or of work in analytic or organic chemistry.

(*b*) *Physics.*—Eight semester hours required, of which at least two must be laboratory work. It is urged that this course be preceded by a course in trigonometry. This requirement may be satisfied by six semester hours of college physics, of which two must be laboratory work, if preceded by a year (one unit) of high school physics.

(*c*) *Biology.*—Eight semester hours required, of which four must consist of laboratory work. This requirement may be satisfied by a course of eight semester hours in either general biology or zoology, or by courses of four semester hours each in zoology and botany, but not by botany alone.

(*d*) *English Composition and Literature.*—The usual introductory college course of six semester hours, or its equivalent is required.

(*e*) *Nonscience Subjects.*—Of the sixty semester hours required as the measurement of two years of college work, at least eighteen, including the six semester hours of English, should be in subjects other than the physical, chemical or biologic sciences.

(*f*) *French or German.*—A reading knowledge of one of these languages is strongly urged. If the reading knowledge in one of these languages is obtained on the basis of high school work, the student is urged to take the other language in his college course. It is not considered advisable, however, to spend more than twelve of the required sixty semester hours on foreign languages. In case a reading knowledge of one language is obtained by six semester hours of college work, another six semester hours may be well spent in taking the beginner's course in the other language; if this is followed up by a systematic reading of scientific prose, a reading knowledge of the second language may be readily acquired. When a student spends more than two years in college he may well spend twelve semester hours of his college work in the second language.

Revision of the Council's Classification of Medical Colleges

The reorganization of medical education has now advanced to the point where another general classification of medical schools is essential and should be made as soon as circumstances will permit. This reclassification has been considered repeatedly by the Council during the last three years, but each time for good reasons definite action was postponed. Aside from the necessity of this revision on general grounds, it is now of special importance in connection with the recognition of medical schools by the federal service under the regulations of the selective service law. Since the effect of these regulations will be the closure of such institutions as are not considered "well-recognized" because of the drafting of their students, if the war continues any length of time, it is particularly important that the Council's classification shall be made in strict justice and that it be based on the actual conditions now existing in the schools.

At its February meeting, the Council voted to submit to the House of Delegates, for its approval, a slightly modified basis for the classification of medical schools and asked for authority to proceed with the general reclassification on the new basis. The revised schedule for the grading of medical schools is as follows:

New Schedule for the Grading of Medical Schools

Schools will be rated as heretofore on a civil service basis on a scale of 1,000 points. The data relating to each school will be grouped under ten general heads in such manner that the groups will have as nearly equal weight as possible, each group allowing a possible 100 points (10 per cent.) out of a possible 1,000 points (100 per cent.). The revised schedule showing the general heads under which the data will hereafter be arranged are as follows:

1. Character of curriculum, grading of course, sequence of subjects, supervision, administration, etc.
2. Medical school buildings; adaptability, light, heat, ventilation, cleanliness, etc.
3. Laboratory facilities and instruction.
4. Dispensary facilities and instruction.
5. Hospital facilities and instruction in medicine, surgery, obstetrics, and gynecology.
6. Hospital facilities for instruction in medical specialties and provision for clinical clerkships, necropsies, etc.
7. Full-time instructors and assistants with special reference to their special qualifications and evidences of their work, including research.
8. Faculty, number, qualifications and organization of, including the staff of teaching hospitals.
9. Library, museum, charts and special apparatus and evidences of the use made of them.
10. Showing of graduates at state board and other examinations and other evidences by which the training received is indicated.

It will be noted that the question of financial income is not directly referred to in the ten heads outlined. It is quite evident, however, that no college can secure an adequate number of expert full-time teachers, provide well equipped laboratories, library and museum, and be conducted in accordance with present-day medical knowledge without a liberal income in addition to students' fees.

Class A Colleges will, as heretofore, be those which are acceptable; Class B, those which, under their present organization, give promise of being made acceptable by general improvements, and Class C those which (*a*) require a complete reorganization to make them acceptable; (*b*) which do not keep satisfactory records of their students in regard to entrance requirements, attendance, grades in courses, division into classes and reasons for promotion; (*c*) which do not enforce their requirements in regard to admission (including those admitted to advanced standing), promotion and graduation; (*d*) which give the major portion of their instruction after 4 o'clock in the afternoon; (*e*) which are privately owned and conducted for profit, and (*f*) which for other specific reasons are not eligible for inclusion in Class B.

Continuous Sessions in Medical Schools

At the conference held in February, the chairman of the Council who is a member of the Surgeon-General's staff at Washington, presented a scheme for a continuous session in medical schools. The scheme outlined, suggested that for the duration of the war, each year be divided into three periods, of four months each, these sessions beginning in October, February and July of each year. It was shown that the student could enter on the study of medicine at the beginning of any one of these periods and continue for eight successive periods of four months each, at which time he would graduate and enter on an intern service of one calendar year. This would require just four calendar years when he would be ready for active service with the Army. It was argued that by the adoption of this or some similar scheme the summer periods heretofore looked on as vacation time would be utilized; the extensive teaching plants would be kept in continuous operation, and students would be graduated from nine to twelve months earlier than under the methods heretofore prevailing. Under this scheme the present junior class would be graduated four months earlier; the present sophomore class would be graduated eight months earlier, and the present freshman class would be graduated a year earlier than under the former method. It was argued also that since there would be no vacations for the boys in the trenches, or for the medical officers in the service, there appeared to be no reason why those remaining at home in the enlisted reserve corps, or on the teaching staffs should not utilize the summer months to good advantage. The Council, however, is not unanimously in favor of the continuous session, since one member believes that the speed of production gained would not compensate for the loss of the thoroughness in teaching and the drain on the students health. It is stated that at McGill and Toronto Universities in Canada the system has been abandoned excepting for the last year students.

Present Scope of the Council's Work

During the fourteen years since the Council on Medical Education was established its work has developed and broadened under the direction of the secretary of the Council:

(*a*) Statistics are collected each year regarding the successes and failures of physicians at examinations conducted by state medical licensing boards. This material is tabulated and published in April each year in the State Board Number of The Journal.

(*b*) Statistics are collected each year in regard to medical colleges, students and graduates in the United States and Canada. These statistics are tabulated and published in August each year in the Educational Number of The Journal. Information also in regard to foreign medical colleges is being regularly obtained and kept on file.

(*c*) During the last five years the secretary of the Council has also had supervision of the American Medical Directory. This is a logical arrangement since so much of the data going into it is regularly obtained by the Council.

(*d*) The biographical index of physicians of the United States, which was begun with the publication of the American Medical Directory, is now under the direction of the secretary of the Council. Official information in regard to the graduation and licensing of each physician, which is regularly obtained, enables the Council to keep the biographical index of physicians up to date. This file now contains cards for 152,000 physicians of the United States and Canada.

(*e*) Since 1910 a register of medical students has been kept by the Council. This consists of an index showing full data regarding medical students from the time they enter the medical school. When the student has graduated, has obtained a license and has secured a location, his card is transferred to the biographical index of physicians. The information in this file is such that, should the records in any of the colleges be destroyed by fire or otherwise, the Council could replace the essential data regarding the students.

(*f*) The "Personal File" of information regarding physicians has thus far been kept up by various departments of the Association, but has always been an important adjunct to the biographic index of physicians. Recently, through the urging of the Federation of State Medical Boards, arrangements have been made to enlarge this file, so as to make the Council's headquarters a central bureau of information, especially in regard to illegal practitioners of medicine.

(*g*) The Council keeps in touch with all state licensing boards, noting changes in the personnel of those boards and in the requirements regulating the practice of medicine in the various states, particularly in regard to the educational standards enforced. At certain intervals information regarding the requirements to practice medicine in foreign countries is also obtained, through the American ambassadors or consuls in those countries. On the basis of this information a book of "Laws (Abstract) and Board Rulings Regulating the Practice of Medicine in the United States and Elsewhere" is compiled by the Council and published each year.

(*h*) Three tours of inspection of all the medical colleges in the United States have been completed, and of certain medical colleges six or more inspections have been made. Of the medical schools of Canada, two tours of inspection have been made. The classification of medical schools is published at frequent intervals in *The Journal of the American Medical Association* and in pamphlets. It is revised each year in accordance with changes made in the ratings of individual colleges.

(*i*) The Council conducts an annual conference on medical education and licensure. The conference has grown until it has drawn to it the annual meetings of other educational agencies, resulting in what might be termed an annual congress on medical education and licensure. This congress is now participated in by the Council, the Association of American Medical Colleges and the Federation of State Medical Boards of the United States. Other educational bodies are also holding meetings during the time of the conference. This annual conference has been the "open forum" where educational standards and other problems relating to medical education have been brought up for discussion. These conferences have resulted in securing united action by the various agencies interested in medical education, which accounts partly for the rapid progress since the Council was organized.

(*j*) From the beginning of this work the Council has carried on a campaign for higher standards of preliminary education, not only with medical colleges but also with state licensing boards.

(*k*) Since 1913, of the annual reports of the United States Bureau of Education, the chapter on medical education has, on request, been furnished by the secretary of the Council.

(*l*) The improvements resulting from the Council's work, through its conferences, its classifications of colleges and its campaign for standards of education, has made the Council an important factor in the standardization of high schools, and, more recently, of colleges of arts and sciences. Several years ago an effort was made to ascertain whether an education in an approved four-year high school was actually being required for admission by medical schools. More recently, under the increased entrance standard, it became equally essential to ascertain whether the medical school was actually requiring two years of work in an approved college of arts and sciences. In 1912 the secretary of the Council collected the material for the preparation of a list of approved high schools, the list to include only those high schools which were accredited by the various state universities. It was found unnecessary to continue that work, however, since Dr. Kendric C. Babcock, then specialist in higher education of the United States Bureau of Education, consented to take it up. During the last two years the Council has compiled a list of approved colleges of arts and sciences, basing that approval on the list of colleges approved by standardizing agencies in whose methods the Council has confidence. This list by the Council may also be unnecessary at a later time when the Bureau of Education or other agencies shall be in position to compile such a list and keep it up to date.

(*m*) At the beginning of its work the Council published two standards, one for immediate adoption by the medical schools and state boards. The first was for immediate adoption and advocated a four-year high school education, a four-year medical course, and an examination for the license to practice. The second, then termed the "ideal" standard, advocated a year of preliminary collegiate preparation, including courses in physics, chemistry and biology, a four-year medical course and a year's internship in a hospital, preceding the examination for the license. This ideal standard has been exceeded in the matter of preliminary requirements, since two years of college work, instead of one, has proved to be the most satisfactory arrangement in this country. There remains the general adoption of the hospital intern year to entirely fulfill the requirements of the ideal standard suggested by the Council in 1905. Special effort in this direction is now being made. In 1914 a list of hospitals considered in position to furnish acceptable internships was prepared and published. During 1915 this list was carefully reviewed by state advisory committees and in 1916 a revised edition was published. At the annual meeting in 1917 the House of Delegates adopted the recommendation of the Reference Committee on Medical Education that $2,500 a year for three years be appropriated to further the work of investigating and standardizing hospitals. This increased appropriation has been granted by the board of trustees. The work will be advanced, therefore, definite standards will be fixed and a limited amount of hospital inspection will be done. In this work, the Council will cooperate with medical colleges, state licensing boards and other interested agencies.

(*n*) The Council has naturally kept itself fully informed regarding the various medical cults and has been in position to furnish reliable information in regard to them where such information was needed. Most of the cult schools have been inspected and first hand information regarding them is available, especially in regard to some of them which during the last year or so have received the legal right to grant M.D. degrees. On account of (*a*) the lack of, or exceedingly low entrance requirements; (*b*) the lack of teachers who have had a complete medical training; (*c*) the failure to study and recognize the various factors entering into the causation of diseases; (*d*) the resulting failure to ascertain the effective therapeutic measures which might be used, and (*e*) the lack of adequate laboratories, laboratory equipment, hospitals and clinical material—on account of all these deficiencies, no cult college could be considered as equal to the average medical college rated in Class C. The chief objection to the medical cult colleges has not been to the medical cults *per se*, but to their lack of, or seriously low educational standards.

(*o*) The headquarters of the Council have, in fact, become a clearing house of information in regard to medical education, medical licensure, medical cults and other matters pertaining to these subjects. The Council has at its headquarters information which cannot be obtained in any other place. The use which state boards and others are making of this information has grown tremendously, as indicated by the voluminous correspondence that comes regularly to the headquarters of the Council. A tremendous amount of information goes also to prospective medical students and the demand for the pamphlet entitled "Making the Right Start," which was prepared especially for prospective medical students, has been constantly increasing. The volume of correspondence required to answer inquiries is already large and is steadily increasing. Much of the information is now regularly published in the *Monthly Bulletin* of the Federation of State Medical Boards, which goes to all members of all state boards.

The Council's Permanent Files

The files of data at the headquarters of the Council are as follows:

(*a*) Announcements of medical schools of the United States: These files are being kept up to date and so far as possible back numbers of the announcements of schools have been obtained. Catalogues of many of the foreign medical schools are also on file.

(*b*) Lists of medical graduates: This file consists of alumni lists, either in printed or card index form, which are complete for all schools existing as well as for the majority of schools which have become extinct. For the extinct schools our information is occasionally being added to and our files are gradually becoming more complete.

(*c*) Information in regard to foreign medical colleges, foreign graduates and the legal requirements for practice abroad.

(*d*) Biographical index of physicians of the United States and Canada. Every card shows the personal and educational history of each physician. Official data regarding the medical graduation and licensure of each physician is shown.

(*e*) Biographical card index of medical students enrolled in the medical colleges of the United States and Canada. Reports are received each year which keep this index up to date.

(*f*) Data obtained from the inspections of all medical colleges.

(*g*) Miscellaneous pamphlets bearing on medical education.

(*h*) Catalogues and other information in regard to medical cults. Much information has been obtained by actual inspection.

THE COUNCIL'S WORK AND THE WAR

As already stated, by the time this country entered the world war the reforms among medical colleges had made sufficient progress that for several years most of the medical graduates had benefited from the improved conditions in medical schools, such as the higher entrance requirements, the more skilled teachers, the better laboratories and laboratory equipment, the better clinical material and the greatly improved methods of medical teaching. It is the graduates of the last several years also, who, in largest proportions, have entered the government medical services. But the Council and the information it has collected have rendered other important services to the government, which are briefly enumerated as follows:

(*a*) When the selective service law was enacted, it made no provision for the exemption of medical students. In the Medical Students' Register, the Council had the home addresses of the majority of the students enrolled during 1916-1917, and was able by direct correspondence to secure reliable information showing the proportion of students who would be taken by the draft. The data collected had much to do with the provision made later whereby drafted students were permitted to enter the enlisted reserve corps and to remain in the medical colleges until they should complete their medical training.

(*b*) Only such students were eligible for admission to the enlisted reserve corps as were enrolled in "well-recognized" medical colleges, which were defined as those recognized by the majority of state medical licensing boards. The only information immediately available by which it could be decided which colleges were so recognized, was Table D published last year in State Board Statistics (similar to Table 1 in this report) and which was based on reports signed by the various state board officers.

(*c*) The Council's files of information in regard to medical colleges were also placed at the disposal of the Surgeon-General, and the secretary of the Council has cooperated in inspecting and furnishing reports to the Surgeon-General regarding a number of medical schools.

(*d*) The biographical information in the files at the Council's headquarters has been used for the Surgeon-General in checking the qualifications of applicants for the medical reserve corps before commissions were granted. That information has also made possible the compilation and publication of the Honor Roll of Physicians in the campaign for the enlistment of additional medical officers.

(*e*) The Council's files of information in regard to standards of preliminary and medical education have likewise been utilized by the Surgeon-General's Office. This information included, also, a list of the approved colleges of arts and sciences and a list of hospitals considered in position to furnish acceptable internships, both of which lists were compiled by the Council.

IN CONCLUSION

The above outline of the Council's work shows the character of the information gathered and the great service it has rendered to the public, to the medical profession, and, more recently, to the government. Some idea, also, can be formed of the influence which, through its Council on Medical Education, the American Medical Association is wielding in the educational world. Through the work of the Council, the medical profession is being recreated by shutting off the supply from low grade colleges and increasing the output of high grade, well equipped colleges. Under the increased standards of preliminary education and the highly improved methods of teaching, the entire medical profession will be on a much higher plane of education, culture, training and technical skill than has ever before been true. This will place so wide a zone between the qualifications of physicians and those of followers of the various cults, that all laymen of average intelligence will be able to note the difference. Of more importance, however, because of this successful campaign for an improved medical education, the average physician will be able to render a far better service to the public and to the soldiers and sailors who are fighting with our allies in the world war.

Respectfully submitted.

Council on Medical Education,

H. D. ARNOLD, Chairman   WILLIAM PEPPER
R. C. COFFEY   HARRY GIDEON WELLS
W. D. HAGGARD   N. P. COLWELL, Secretary

Report of the Council on Scientific Assembly

The report of the Council on Scientific Assembly was received as printed in the Handbook and referred to the Reference Committee on Reports of Officers.

The report is as follows:

To the Members of the House of Delegates of the American Medical Association:

The Council on Scientific Assembly desires to repeat and to emphasize what it said last year with regard to the number of section meetings in the Scientific Assembly. It will be recalled by those members of this house who were seated at the 1915 session, this same opinion was presented in the excellent report of the special committee on Sections and Section Work: that is, that at our annual sessions too many section meetings are held at the same time. There is no question as to this. The annual sessions of the British Medical Association are often compared with our annual sessions to the advantage or disadvantage of the one or the other, according to the point of view. The British Medical Association is charged with devoting too much time to social functions and renewing acquaintances and too little time to scientific work. We are accused—and the Council on Scientific Assembly believes this is a just criticism—of devoting too much time to scientific work and too little to social enjoyment and getting acquainted with each other.

Your Council is of the opinion that a more effective distribution of time will be presented if the Sections are limited to one meeting a day. Those men who are particularly interested in what they regard as their particular section feel it their duty to attend all the morning and afternoon meetings, any one of which is liable to be extended.

It is a strain to attend every meeting of a section.

It is possible to have too much of a good thing.

There is such a bewildering abundance in the program of the Scientific Assembly that the average man is at a loss to know what section to attend and not infrequently finally ends by not attending any. The man who is faithful to one particular section has no opportunity of attending the meetings of other sections. It would be a good thing for the ophthalmologist if he were free in the morning or the afternoon, to attend the laryngological section and it would do him no harm if he attended the Section on Practice of Medicine or the Section on Nervous and Mental Diseases, or some other; nor would it injure the laryngologist to visit the ophthalmological section or any of the others. This applies also to the internist, the surgeon, the obstetrician, the neurologist, the dermatologist, in fact to all physicians. Our Scientific Assembly ought to be so conducted that a man would not think he was neglecting the section in which he has an especial interest when he takes time to keep in touch with what is being done in other sections or to meet other physicians outside the sections.

The present division of the Scientific Assembly has developed gradually as a result of groups of men, engaged in a special line of practice, requesting the formation of separate sections for their specialties. At the present time, certain individuals and groups cannot get away from the opinion that the sections are independent organizations to which they belong by virtue of "membership" and to which they must give allegiance. They seem not to realize that there is no provision for affiliation with a section other than that a Fellow registering as in attendance at an annual meeting is privileged to "designate the section in which he wishes to be enrolled," and this is for the purpose of voting for section officers. It should be emphasized that the Scientific Assembly of the American Medical Association is an entity and that the sections are merely parts of a whole.

The Council would not be misunderstood. Allegiance to a particular section is desirable. It has been and is an important factor in developing scientific work.

The Council is gratified to note that in addition to the Section on Ophthalmology, which by the standing rules of the section has limited the number of papers admissable to its program for any annual session to twenty-five, the Section on Practice of Medicine took action last year fixing twenty as the maximum number of contributions to be listed on its program.

Friday Meetings of the Scientific Assembly

The Council desires to lay stress on the importance of the sections arranging attractive programs for the meetings of Friday of the week of the annual session. Prior to the annual session of 1917, it was the custom for the Scientific Assembly to close with the Thursday afternoon meetings, the sections listing their papers in not more than five units or meetings. The first of these meetings was held on Tuesday afternoon. Rarely, one or two sections continued through to Friday morning. Apparently, when the opening meeting of the sections was fixed for Wednesday morning there was a tendency on the part of the sections to make available only the four meetings on Wednesday and Thursday. The Council on Scientific Assembly has endeavored to induce the sections to utilize the two units on Friday for such meetings. It is important that this shall be done in order that the scientific program may be distributed through six units, two each on Wednesday, Thursday and Friday so as to maintain and improve the scientific value of the program and yet permit fewer meetings held simultaneously. With this end in view, the Council on Scientific Assembly has been successful in securing the cooperation between the sections and arranging for a continuation of the program throughout Friday. If the full three days are used for section meetings, it will be very easy to carry out the suggestion that the number of these meetings being held at the same time shall be not more than eight.

Meetings of the Section on Miscellaneous Topics

In accordance with the authority vested in this Council, it has arranged for two series of meetings of the Section on Miscellaneous Topics and has appointed officers for each of these series of meetings. The first series of two meetings under this section is assigned to a discussion of questions relating to the reeducation and reclaiming of the war injured and is being conducted under the chairmanship of Lieut.-Col. Frank Billings, Chicago, who is in charge of this work in the Surgeon-General's Office, with Major James Bordley, Jr., Baltimore, vice chairman, and Major Harry Mock, Chicago, secretary. A second group of meetings of the Section on Miscellaneous Topics is assigned to the discussion of questions pertaining to the execution of the selective service regulations and the Council appointed the following officers for these meetings: Major Hubert Work, Pueblo, Colo., chairman, who is medical aide in Provost Marshal General's Office; Major Reuben Peterson, Ann Arbor, Mich., medical aide to the governor of Michigan, vice chairman, and Major John M. Dodson, Chicago, medical aide to the governor of Illinois, secretary.

Respectfully submitted.

E. S. Judd, Chairman,
Roger S. Morris,
George H. Simmons,
J. Shelton Horsley,
Alexander R. Craig.

Report of the War Committee of the American Medical Association

The report of the War Committee was presented by the chairman, Dr. Hubert Work, Colorado, and referred to the Reference Committee on Reports of Officers.

The report is as follows:

To the Members of the House of Delegates of the American Medical Association:

The War Committee, constituted by action of the Board of Trustees at its annual meeting held Oct. 19, 1917, and ratified by a postal vote of this House of Delegates, as soon as it was empowered, proceeded to Washington in company with the Editor of The Journal. On its arrival there, your committee sought and obtained an interview with the Provost Marshal-General and his associates and formally tendered the services of the American Medical Association to that office for such service as the Association could render in the creation of medical advisory boards. The Provost Marshal-General asked the committee to submit a definite working proposition for the formation and supervision of these boards. This the committee did and the general plan was approved by the Provost Marshal-General and afterward adopted.

Your committee then returned to Chicago and arranged a meeting with representatives of the Committee on States Activities, General Medical Board, Advisory Commission, Council of National Defense. At this conference Drs. Edward Martin, Philadelphia; F. F. Simpson, Pittsburgh, and John D. McLean, Philadelphia, announced that they were in position to serve as a committee from this Committee on States Activites to cooperate with the Committee of the American Medical Association and it was agreed that these three, together with the three constituting the American Medical Association committee, should become a joint committee and that it should have authority to name a seventh member. Subsequently, this joint committee met in Washington, D. C., November 1, when the joint committee organized by electing Dr. Edward Martin, Philadelphia, chairman, adding the secretary of the American Medical Association to the committee and selecting him as its secretary.

The joint committee was advised that the Provost Marshal-General desired immediately to have suggested to him for each state the name of a member of, or of a physician who would accept a commission in the Medical Reserve Corps, in order that a request might be made to have these medical officers ordered to active duty as medical aides to the governors of the states in the erection of the medical advisory boards. The joint committee thereupon proceeded to select a physician in each state to be recommended for this duty. On November 16, the joint committee reconvened in Washington at which time the members representing the American Medical Association were advised by Dr. McLean, Secretary of the Committee on States Activities, Medical Section, Council of National Defense, that it had been found necessary to substitute twenty-four names of men for a like number agreed on at the previous meeting of the joint committee to serve as medical aides to the governors. He further reported that the men who had finally been selected, including the substitutions, had been notified of their appointments and had been ordered to present themselves in Washington to be commissioned and instructed at a conference held on Saturday, November 18. The joint committee was then called into session by Dr. Franklin Martin and the following were added to the committee: Drs. Franklin Martin, ex officio; Charles H. Mayo, President of the American Medical Association, and Robert L. Dickinson, Brooklyn. Just before the adjournment of this last named committee, the chairman of the War Committee of the American Medical Association announced that the Association stood ready to cooperate to further war interests stating definitely that the work volunteered by the Association must be done through its war committee in order to maintain the identity of the organization.

Since this meeting, held from November 16-18, inclusive, no advantage has been taken of the Association's offer to cooperate with the Council of National Defense in the matter of establishing and standardizing the medical advisory boards, or in any other direction.

In January, the War Committee of the American Medical Association learned that the medical aides to the governors were being advised by the Committee on State Activities, General Medical Board, Council of National Defense, that their work had been completed, and that their active duty would cease. An inquiry addressed to the office of the Provost Marshal-General brought a reply stating that under the Selective Service Regulations that office has, under the Secretary of War, sole and exclusive jurisdiction of the administration of the Selective Service Law and the proper steps have been taken to continue the services of medical aides to governors until such time as this office is satisfied that their services are no longer necessary.

At its meeting, held on Feb. 1, 1918, the Board of Trustees further empowered the War Committee to act in cooperation with the Provost Marshal-General's Office, the Surgeon-Generals of the Army and Navy, and such other military offices as may be deemed best in the interest and for the successful conduct of the war, and directed Dr. A. R. Mitchell of Lincoln, Neb., to succeed Dr. E. J. McKnight, deceased, as a member of the War Committee representing the Board of Trustees. It further added to the War Committee as ex officio members thereof, the President and Secretary of the American Medical Association, and the editor of THE JOURNAL.

Under date of April 3 the Surgeon-General of the Army addressed the American Medical Association submitting a memorandum of a plan for the utilization of the organization and machinery of the Association, in addition to the activities of the other bodies, viz., the Medical Section of the Council of National Defense and the different sections and organizations of the American Medical Association, for the purpose of securing future increment to the Medical Reserve Corps and for keeping the numerical strength of the Corps up to the requirements of the service. This plan contemplates a close cooperation between the office of the Surgeon-General and the officials of the American Medical Association, through the officials of the different state and county medical societies and through the different section organizations of the American Medical Association. On receipt of this communication, the War Committee convened in Chicago, April 16, and by formal action undertook the task assigned to it by the Surgeon-General of the Army, and issued a statement announcing its action and declaring its confident anticipation of the hearty, active, patriotic cooperation of all physicians for the successful accomplishment of the task. Immediately, a call was issued for a conference of the secretaries of the constituent state associations which was held at the headquarters of the Association in Chicago on April 30.

At this conference, thirty-eight constituent state associations were represented by their secretaries or an accredited alternate. Dr. Thomas McDavitt, secretary of the Minnesota State Medical Association and chairman of the Board of Trustees, was elected chairman of the conference and the entire day was devoted to the discussion of how the organized medical profession can be utilized effectively for the winning of the war and, specifically, how the American Medical Association, its constituent state associations and their component county societies can assist in enrolling the required increments for the Medical Corps of the Army and Navy. On the adjournment of the conference, the secretaries of the state associations returned to the several states with the determination to coordinate the forces of the organized medical profession in their states with other agencies working with similar objects.

To determine to what extent the medical profession in various parts of the country had met its responsibility to the government the War Committee published in THE JOURNAL for June 1 a survey or Honor Roll of the medical profession of the United States. This survey presented under each state a table which showed important facts regarding each county in the state: the area, population, total number of physicians, number of physicians under 45 and under 55 years of age, number of women physicians, number of physicians members of the county society, and the number of physicians under commission in the Army and in the Navy. In addition to this table, there was published for each state, under the counties and postoffices the names of all those physicians of the state, who had accepted commissions in the Medical Reserve Corps of the Army and Navy or who were in active service in the Medical Department of the Federalized National Guard. The published list did not include the names of the members of the regular Medical Corps, those who had been commissioned in the Reserve Corps but who had not accepted their commissions, nor those who were serving as contract surgeons. This Honor Roll has proved effective in stimulating applications of commissions in the Medical Reserve Corps. The War Committee, with the cooperation of the war committees of the state associations and of the county societies, is confident that the increments for the Medical Corps of the Army and Navy which are or will be required will be supplied. Your committee is gratified to note the prompt and altruistic response of the profession to every appeal which the American Medical Association has made to the medical profession of the United States to serve in winning the war.

Respectfully submitted,

HUBERT WORK, Chairman,
M. L. HARRIS,
A. R. MITCHELL,
Ex-officio { CHARLES H. MAYO, President,
A. R. CRAIG, Secretary,
GEORGE H. SIMMONS,
Editor of THE JOURNAL.

Address by the President, Dr. Charles H. Mayo

The Chairman introduced Dr. Charles H. Mayo, Rochester, Minn., President of the Association, who addressed the House of Delegates as follows:

To the Members of the House of Delegates of the American Medical Association:

I am very glad to meet you. These are momentous times in medicine. Never before has medicine had the opportunity that it has today to make a record for itself in the world's work. The war could not be carried on if it were not for the work that has been done by medicine. We are today able to accomplish in wholesale manner the things that we used to fight for as units.

Medicine has changed from that in the past history of the world, and especially in army life and army work. It came about through much tribulation. Away back in the earliest history of our country, Washington, an engineer himself, gave the engineers first position. The physician then was a contract surgeon, and it took a long time before he was able to get a uniform. When he first got the uniform, soldiers were instructed that they need not salute medical officers. After a time the physician got an epaulet on his left shoulder, and later he was able to wear two of them; but slowly has the physician made progress in army life. We find this lack of appreciation evidenced in various ways all over the country, and especially in Washington. Medicine is very large in what it does, but it accomplishes things by various boards in various capacities all over the country, always splitting up, never a harmonious whole. In Washington today there are seventeen different boards and bureaus of medicine. Under the Treasury Department we have the National Public Health Service; under the Bureau of Labor, the Welfare of the Children and Protection of Industries; under the Department of Commerce, we have the Census Bureau, mortality statistics, and various other things connected with that department. Under the Department of the Interior we have control of the insane and the housing of the insane, all who do not belong to some local community. The various boards and bureaus are supported by appropriations, so that while we have an opportunity to have a wonderful national bureau of health, it cannot be because we are not permitted to coordinate this work, which is the ultimate goal of medicine.

In Europe the best organized department of the army is the medical service. War has changed in its conduct today. It is the business man that conducts war, and it is necessary that he prepare for it here as was done in France and in England. It is the business of war to use in every way the highest intelligence we have, not only to bring about the best fighting force, but to look after the preservation of the health of the soldiers and to keep the nation behind it, and this is the work of trained minds.

It has been the part of physicians for ages past to allow personalities, little bickerings and trouble to prevail among themselves. I often think that probably medicine stands as high today as it deserves to stand from the manner in which we have conducted ourselves. A lack of harmony in the profession itself has resulted in the position that we occupy. There are lots of good men in the profession. In fact, all are good men. But there has been a failure to work together in the past, a failure due to conducting our business as a personal unit in competition with others. This naturally led to the present conditions. We now have the opportunity due the greatest profession in the world. Our troubles are all our own fault, and I hope that in the discussions before this body, and in the work conducted at this meeting, we shall realize our great opportunity in developing this battle against the Hun. The part that we are to play in the world was never so great as at this time, and if it is possible to eliminate in every way anything that detracts from medicine as a whole, we shall have accomplished much for the future of medicine.

The work we are carrying on is great. It must not be allowed to be belittled by any one who would bring before this body anything that would tend to defeat us, because that would be aiding and abetting the enemy. It should be looked on as treason.

In our country, I think every member of the American Medical Association is doing his bit. All of the ex-Presidents and the President of this Association are in Washington helping to conduct the medical side of things. Our Chairman of the House of Delegates is an all-time worker in Washington. In Washington we have Dr. Billings, Dr. Vaughan, Dr. Welch, Dr. William J. Mayo, and Dr. Reed and Dr. McMurtry on the medical board; and in the administration we have Surgeon-General Blue and Surgeon-General Gorgas, ex-Presidents of the Association, so that the members of this Association have in no way been negligent of their duties from the highest to the lowest.

The Chairman said: I am very glad to assure you, Mr. President, that there is no feeling in the House of Delegates except the one of cooperation. We have no animosities, no axes to grind, no friends to reward, no enemies to punish. We represent the American Medical Association for what it has tried to do in the past.

At the conclusion of his report the Secretary presented a communication by Dr. John W. Trask urging that the Committee on Nomenclature be revived and reconstituted.

Address by Major Rist

The Secretary escorted Major E. Rist of France to the platform. Major Rist said:

Mr. Chairman and Members of the House of Delegates:

I thank you very much for your warm welcome. I feel very much honored to be present at this meeting of your Association. Your Chairman has asked me to say a few words. I hesitate to do so because I know that your time is precious.

It has always been my desire to be present at one of the meetings of the House of Delegates of the American Medical Association. I am an old friend and a diligent student of your medical organizations, of your universities and medical schools, and I am particularly glad that now so many physicians and surgeons of the United States are coming over to France that ties are going to be tightened between the medical professions of both countries. I think we in France have very much to learn from you. Especially we have to learn and to try to imitate your admirable spirit of association and organization. I know a little of the perfectly marvelous work which your Association during the last sixteen or twenty years has been doing in elevating the standards of the medical profession, in improving the conditions of medical education to a degree which I think is absolutely unparalleled in the history of medicine. This you owe to the leaders of this Association and to the characteristic spirit of association work in America. We have much to learn from you in this respect, and I should like to devote as much time as possible and in some way be to France a messenger from America, to tell them what can be done if one has really that spirit of association that you possess, and to urge my fellow physicians to try and in some way do some of the things which you are doing here.

I have been studying medical education in France, in Germany, in Great Britain, and in the United States. I think medical education in the United States is now the model of the world. I am perfectly sure that nowhere could there have been established as high standards for entrance into medical schools and as high standards of education in your schools. You lead the world in this respect. And there is another field in which the United States leads the world, and that is the field of public health. In this respect, the example which is being given now by your medical officers in France is a very inspiring one which, I am quite sure, we will try to follow even during the stress of war, but in a more complete and more perfect way when this war, thanks to the powerful cooperation of the United States as a nation, and the United States Army and Navy, will be brought to a victorious conclusion.

The Chairman said: Major Rist is known as the Osler of France. You will all agree, I am sure, that our only Sir William Osler might feel very much complimented at the designation.

The Chairman appointed as the Committee on Reapportionment Drs. Edward B. Heckel, Pennsylvania; P. S. Roy, District of Columbia, and John Ridlon, Illinois.

At 12:30 the House took a recess until 3 p. m. and reconvened at 3 o'clock.

Report of Committee on Credentials

Dr. D. Chester Brown, Connecticut, Chairman, presented a report for the Committee on Credentials, that 112 delegates had registered, and their credentials had been found correct, properly authorizing them to represent the states, sections and government services from which they came.

The Committee on Credentials reported further that Dr. E. D. Kilbourne had presented himself with letters of credit from the Hawaiian State Medical Association, but the Committee finds that the Doctor has not been a Fellow of the American Medical Association for the term of two years immediately preceding this Annual Session. In consequence the Committee recommends that the courtesies of the floor of the House of Delegates, without the right to vote, be extended to Dr. Kilbourne.

Dr. Dwight H. Murray, New York, moved the adoption of the report together with the recommendation.

Seconded and carried.

Resolution for Ad-Interim Committee

Dr. Charles H. Mayo, Minnesota, introduced the following resolution:

Resolved, That the House of Delegates create an Ad-Interim Committee to deal with emergency problems which constantly arise, such committee to consist of the President, President-Elect, the Chairman of the House of Delegates, the Secretary of the Association, the last two living retiring presidents, and Chairman of the Board of Trustees.

Resolved, That the President of the American Medical Association be authorized to appoint such members of committees which have not been provided for by the House of Delegates or the Board of Trustees. The work of such committee to be reported for consideration and action to the Ad-Interim Committee. (Referred to the Reference Committee on Amendments to the Constitution and By-Laws.)

Report on Red Cross Medical Work

Major W. C. Rucker, District of Columbia, Chairman, reported on Red Cross Medical Work, stating that this Committee had had no meeting and had done no work during the past year. The responsibility for this rested on the chairman, who had been in France, and therefore had been unable to give any attention to the matter.

Resolution on Use of Drugs

Under the head of "New Business," Dr. M. L. Graves, Texas, presented a resolution relative to the use of drugs originated or manufactured by citizens of nations with which we are at war. This was referred to the Reference Committee on Miscellaneous Business.

Report of Reference Committee on Reports of Officers

Dr. H. G. Wetherill, Colorado, reported for the Reference Committee on Reports of Officers, recommending that the report of the Council on Medical Education be referred to the Reference Committee on Medical Education. There being no objection, the Chairman ordered the reference recommended.

Resolutions on Animal Experimentation

Dr. P. S. Roy, District of Columbia, offered two resolutions, which he presented as a representative of the Medical Society of the District of Columbia. The first one conveyed a protest against endeavors to check animal experimentation, declaring that persons who endeavored to arrest any aid that the medical profession through such animal experimentation or otherwise is giving to our soldiers constituted a dangerous class and were aiding the enemy. The second related to the inadequacy of the supply of trained nurses to meet the needs in civilian life, while at the same time caring for the armed forces. Both these resolutions were referred to the Reference Committee on Hygiene and Public Health.

Resolution on Rank for Women Physicians

Dr. E. O. Smith, representing the Section on Genito-Urinary Diseases, introduced a resolution recommending that the President of the United States, Secretary of War, and Surgeon-General of the Army appoint women physicians to the Medical Reserve Corps of the United States Army on the same footing and with the same rank and pay as men. This resolution was referred to the Reference Committee on Legislation and Political Action.

Dr. H. G. Wetherill, Colorado, offered a similar resolution and requested that it be referred to the same Reference Committee. The resolution was so referred.

Dr. Abraham Jacobi, New York, an ex-president of the American Medical Association, was escorted to the platform and introduced to the House of Delegates amid great applause.

Dr. John Ridlon, delegate from the Section on Orthopedic Surgery, presented a resolution in reference to universal military training, which was referred to the Reference Committee on Miscellaneous Business.

Resolution for Revision of Patent Laws

Dr. E. Eliot Harris, New York, offered a resolution calling for a revision of the patent and trademark laws as applied to all medical and surgical products and devices, which resolution was referred to the Reference Committee on Legislation and Political Action.

Resolution on Health of Civilian Communities

Dr. Floyd M. Crandall, New York, offered a resolution calling for cooperation in securing the greatest possible degree of health in the community, which was referred to the Reference Committee on Medical Education.

Amendment to By-Laws

Dr. Rock Sleyster, Wisconsin, presented the following amendment to Article IV, Section 3, by adding the following:

"Provided, however, that the House of Delegates may change the time of election by an action taken at a meeting at least a day in advance of that to which the election is to be changed, and provided, further, that the motion to change the time of election shall be supported by three-fourths of the delegates present and voting."

The amendment was referred to the Reference Committee on Amendments to the Constitution and By-Laws.

Dr. M. A. Kelso, Oklahoma, presented a resolution which was referred to the Reference Committee on Miscellaneous Business.

Resolution on Rehabilitation and Reeducation of Disabled Soldiers

Dr. George H. Kress, California, presented two resolutions. The first referred to the conserving of means now being established for the rehabilitation and reeducation of crippled soldiers, in order that these facilities may be available for similar work at the close of the war in connection with those who are injured in the course of their civil occupations. This resolution was referred to the Reference Committee on Hygiene and Public Health. The second resolution referred to the utilization of the services of women physicians of the country as members of the Medical Reserve Corps. This was referred to the Reference Committee on Legislation and Political Action.

On motion, which was duly seconded and carried, the House of Delegates adjourned, to meet at 9:30 a. m., Tuesday.

Second Meeting—Tuesday Morning, June 11

The House of Delegates met at 9:30 a. m. and was called to order by the Chairman.

A quorum being present, the Secretary read the minutes of the previous meetings.

Dr. F. C. Warnshuis, Michigan, moved that the minutes be adopted as read.

Seconded and carried.

Supplementary Report for Committee on Credentials

Dr. D. Chester Brown, Connecticut, chairman, made a supplementary report for the Committee on Credentials, stating that six additional delegates had registered and were entitled to seats in the House of Delegates.

It was moved that the report be accepted.

Seconded and carried.

Report of Reference Committee on Medical Education

Dr. E. A. Hines, South Carolina, chairman, presented the report of the Reference Committee on Medical Education, as follows:

Your committee reports to the Council on Medical Education as follows:

We recommend that the report be endorsed as a whole. No one can read and study this report and consider the results obtained without being impressed with the great importance of the Council's work and its far reaching effect on the medical profession and on the practice of medicine in the United States.

In the excitement and confusion which temporarily resulted from the entrance of this country in the war, it is pleasing to know that educational standards are still being upheld. Nothing short of extreme emergency should be permitted to in any way lower the standards which the Council has so creditably been able to establish, and in this connection several portions of the Council's report deserve special consideration and emphasis:

A thorough knowledge shows that the conditions of the government medical service are not such as to either demand or warrant any reduction in educational standards in regard to either preliminary or medical education. On the contrary, the present needs indicated are of more careful preparation and more thorough instruction than at any previous time. If, in an emergency, any change becomes necessary, it should be by establishing continuous sessions or more intensive instruction than at present prevails. But this should not result in lowering the standard of preliminary education or in reducing the number of hours or their thoroughness of instruction. Even if extreme emergency should demand shortening of the medical course, it should be at the expense of the final portion of the student's work and not at the expense of either preliminary education or of the student's training in the fundamental medical branches.

Attention is called to the standard of education preliminary to the study of medicine prepared by a special committee of the Council on Medical Education. It is evident that this report has been prepared by those who are authorities on those subjects and who have considered carefully the needs of both general and medical education in the country taken as a whole. Your committee recommends that the standard of high school and premedical college preparation included in the report of this special committee receive the endorsement of the House of Delegates.

It is recommended that the Council be given authority to proceed to prepare a new classification of medical colleges just as soon as circumstances will permit, and that the new schedule for the grading of medical schools in future classifications be endorsed.

Attention is called to the fact that the work of the Council in connection with the standardization of hospitals has been in progress since 1913 and represents the only part of the "ideal standard" suggested by the Council in 1904 which has not been generally adopted by the medical schools and state licensing boards in this country. The Council's first list of hospitals which were considered in position to furnish acceptable internships was issued in 1914 and has passed through its second edition. A third revised edition is now in course of preparation. Considering the extensive machinery provided by the American Medical Association through its various constituent state associations, your committee considers that the Council is in an unusually strong position to continue to do effective work along this line. It is recommended, therefore, that the Council be instructed to continue its work in the investigation and standardization of hospitals and that it cooperate as far as possible with medical colleges, state licensing boards and other interested agencies.

Attention is called to the paragraphs in regard to the progress in medical licensure and to the chart showing the advances in the requirement of preliminary education by state boards. These advances are paralleled only by the advances made by medical schools.

Special attention is called, however, to one portion of the Council's routine work, namely, its presentation of statistics regarding physicians licensed in various states. For example, Table 2 in the Council's report is of unusual importance, and the attention of each delegate is called particularly to the line for his home state. It will be seen that in some states graduates of low grade colleges are still being registered in large proportions. Worse than this, it will be seen that in California not only have graduates of low grade colleges been licensed, but the doors have been thrown open to graduates of osteopathic colleges. As noted in Footnote 2: "Of the 83 graduates, 73 were graduates of eight osteopathic colleges which are not generally recognized as medical schools by state licensing boards and only one of the colleges has been recognized by the California board." Attention is also called to the situation in Arkansas, Connecticut, Florida and elsewhere, where two or more separate and independent boards have to do with the licensing of physicians. As noted in Footnote 1, there is a sectarian board in Arkansas which is licensing the graduates of low grade colleges. Improvements in medical laws or in methods of medical licensure are clearly necessary in several states. The states in which changes are most needed are further indicated in Table 4.

The attention of the House of Delegates is called to the statements in regard to the scope of the Council's work and to the extensive files of information at the Council's headquarters. A reading of the statements in regard to these files will give a better appreciation of the tremendous influence exerted by the Council and its work. In fact, the Association can view with satisfaction the great assistance which, through the Council on Medical Education, the Association has been able to render to the office of the Surgeon-General in the present national crisis.

E. A. Hines, Chairman,
J. B. Blake,
W. S. Lalor,
Robert E. Noble.

It was moved and seconded that the report be adopted as read. Carried.

Report of the Reference Committee on Amendments to the Constitution and By-Laws

Dr. Floyd M. Crandall, New York, chairman, presented the report of the Reference Committee on Amendments to the Constitution and By-Laws.

The Reference Committee on Amendments to the Constitution and By-Laws would respectfully report as follows:

Amend Chapter VII, Section 3, of the By-Laws, by adding

(*f*) Ad-Interim Committee.

Sec. 9. Ad-Interim Committee.—There shall be an Ad-Interim Committee, which, between the annual sessions of the House of Delegates, shall consider and act on emergency problems which may arise. This committee shall consist of the President, the President-Elect, the Speaker of the House of Delegates, the Secretary of the Association, the Chairman of the Board of Trustees, and the last two living ex-Presidents. The Speaker of the House of Delegates shall be the Chairman of the Committee, and the Secretary of the Association its Secretary. This Committee shall be subject to the call of its Chairman.

Renumber present Sections 9, 10 and 11.

Amend Chapter V, Sec. 1, of the By-Laws by inserting the following:

He is authorized to nominate committees which have not been provided for by the House of Delegates or the Board of Trustees, which nomination shall be subject to the approval of the Ad-Interim Committee. The Committee so organized shall exist only until the next meeting of the House of Delegates. They must report to the Ad-Interim Committee before the next meeting of the House of Delegates.

At the conclusion of the report, Dr. Crandall moved its adoption, which motion was seconded by Dr. Cyrus L. Stevens, Pennsylvania.

After discussion by Dr. George D. Head, Minnesota; Dr. Floyd M. Crandall, New York; Dr. Alexander Lambert, New York; Dr. Lewis S. McMurtry, Kentucky; and the Chairman of the House of Delegates, the motion to adopt was put and carried.

Dr. Floyd M. Crandall, New York, Chairman, presented the following report for the Reference Committee on Amendments to the Constitution and By-Laws.

Amend Article 9, Section 1, of the Constitution by striking out the words "Chairman and Vice Chairman of the House of Delegates" and substitute the words "Speaker and Vice Speaker of the House of Delegates."

Floyd M. Crandall, Chairman,
H. E. Odell, Medical Inspector, U. S. Navy,
C. P. Meriwether,
Rock Sleyster,
C. L. Stevens.

The committee recommends the adoption of the amendment.

It was moved and seconded that the recommendation of the Committee be concurred in. Carried.

Dr. Floyd M. Crandall, New York, moved that the Secretary of the Association be empowered to rearrange the paragraphs and make such changes in numbering as may be necessary to render the Constitution and By-Laws consistent.

Seconded and carried.

The committee reports further:

Amend Chapter IV, Section 3 of the By-Laws by the addition of the following words: "provided, however, that the House of Delegates may change the time of election by action taken at a meeting at least one day in advance of that to which the election is to be changed, and provided, further, that the motion to change the time of election shall be supported by three fourths of the delegates present and voting."

The section will then read:

Sec. 3. Time of Election.—The election of officers shall be the first order of business of the House of Delegates after the reading of the minutes on the afternoon of the fourth day of the Annual Session of the House of Delegates (the second day of the Scientific Assembly), provided, however, that the House of Delegates may change the time of election by action taken at a meeting at least one day in advance of that to which the election is to be changed, and provided further that the motion to change the time of election shall be supported by three fourths of the delegates present and voting.

It was moved and seconded that the amendment be adopted. Carried.

It was moved that the report be adopted as a whole. Seconded and carried.

Report of Reference Committee on Hygiene and Public Health

Dr. J. W. Schereschewsky, U. S. Public Health Service, Chairman, presented the report of the Reference Committee on Hygiene and Public Health, as follows:

There has been referred to your Reference Committee on Hygiene and Public Health, among other matters, a resolution introduced by Dr. George H. Kress, California, which reads:

Whereas, Our European Allies have, in their vast necessity, found it advisable to undertake a systematic rehabilitation of crippled soldiers through occupational therapeutics, followed by reeducation; and,

Whereas, There are more people crippled in industry than there will be in our Armies if all the men now in service enter the field, if their experience corresponds to that of the Allies; and,

Whereas, A bill has recently been introduced in Congress which, if passed, will provide occupational therapeutic hospitals and auxilary workshops for rehabilitation of crippled soldiers and sailors, and will provide reeducation with compensation for services during rehabilitation. Therefore, be it hereby

Resolved, By the Medical Society of the State of California in its forty-seventh annual meeting, held at Del Monte, April 16, 17 and 18, 1918, that the necessities of the industrially injured require and warrant that the scope of the above referred to legislation be broadened to permit of provision for rehabilitation and training of those who have been incapacitated by industrial injury or by personal injury.

Dr. Wilmer Krusen, Pennsylvania, moved the adoption of the resolution as read.

Seconded and carried.

The committee also had referred to it a resolution by Dr. Roy, representing the Medical Society of the District of Columbia, which reads:

THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA

At a meeting held May 29, 1918, the following report was received and the resolutions therein adopted:

Your Committee on Nursing begs leave to submit the following report:

In view of the present inadequate supply of trained nurses and the great and increasing demand for them both for war work and in civil life; and in view of the fact that many persons in moderate circumstances, or on fixed salaries, with the present high cost of living are unable to afford the services of a registered nurse when ill; and in view of the fact that the present system of training and registering nurses seems to many members of our profession to have serious defects that may be remediable, your Committee recommend the following resolutions:

1. *Resolved,* That our delegate to the American Medical Association be instructed to ask for the appointment by that body of a committee to consider the whole question of training and registering nurses, with special reference to standardizing and simplifying the curriculum and requirements and the advisability of *establishing* a grade of practical nurses who, with a lower preliminary educational requirement and a much shorter course of training may be registered as attendants or practical nurses, and who shall receive a smaller compensation than the graduate nurse; such attendants or practical nurses to be used especially for chronic and convalescent cases and others not requiring the highest nursing skill, thereby relieving many graduate nurses for war work and critical cases in civil practice.

2. We also recommend that our delegate to the American Medical Association be furnished with a copy of this preamble and resolutions for use in the House of Delegates of the A. M. A. and instructed to urge prompt action with such arguments as he deems advisable.

W. P. Carr,
G. Wythe Cook,
I. S. Stone,
J. B. Nichols,
J. A. Gannon,
N. P. Barnes,
Frank Leech,

M. F. Cuthbert,
P. S. Roy,
G. N. Acker,
C. S. White,
E. Y. Davidson,
Committee.

Your committee desires to endorse not only the needs as expressed in the resolution, but also the necessity for the enlargement of all civilian training schools and necessary propaganda to secure a sufficient number of pupils for these. It recommends the adoption of the resolution and the appointment of a committee as suggested.

J. W. Schereschewsky, U. S. P. H. S.
H. P. Ritchie, Minnesota.
Frederic E. Sondern, New York.
C. D. Selby, Ohio.
J. R. Morrell, Utah.

Dr. Henri P. Linsz, West Virginia, moved the adoption of the resolution.

Seconded by Dr. E. J. Goodwin, Missouri.

After discussion by Dr. Thomas S. Cullen, Maryland; Dr. John D. McLean, Pennsylvania, and Dr. J. W. Schereschewsky, U. S. Public Health Service; Dr. Frederic E. Sondern, New York; Dr. P. S. Roy, District of Columbia, and Dr. George H. Kress, California, the Reference Committee substituted for the final paragraph of its report, which reads:

Your Committee desires to endorse not only the needs as expressed in the resolution, but also the necessity for the enlargement of all civilian training schools and necessary propaganda to secure a sufficient number of pupils for these. It recommends the adoption of the resolution and the appointment of a Committee as suggested.

the following:

Your Committee desires to endorse not only the needs as expressed in the resolution, but also the necessity for the enlargement of all civilian training schools and necessary propaganda to secure a sufficient number of pupils for these. It recommends the adoption of the principle of the resolution and that the resolution be referred by the House of Delegates to the Council on Health and Public Instruction with the following instructions:

1. That the Council on Health and Public Instruction appoint a subcommittee to consider this matter.
2. That this Committee consider especially the needs of the civic population with regard to nursing.
3. That this Subcommittee cooperate and advise existing nursing associations and other agencies concerned in this matter.

Whereupon the motion to adopt the report as amended by the Reference Committee was put and carried.

The Reference Committee on Hygiene and Public Health reports further that the following resolution had also been referred to the committee:

The Medical Society of the District of Columbia, at a meeting held May 23, 1918, adopted the following recommendation of the Executive Committee:

Whereas, The work of the American Red Cross is largely medical in character, and

Whereas, Modern medicine is largely dependent for continued progress on the use of animals for experimentation and in the course of treatment of disease, and

Whereas, The War Council of the American Red Cross, by reason of pressure brought to bear by certain misguided people ignorant of medical matters, has seen fit to issue the statement that it will not take a position either for or against the question of animal experimentation, and further has issued the statement that no money is to be taken from the General Red Cross Fund for this purpose, therefore be it

Resolved, That the Medical Society of the District of Columbia vigorously protest against such action by the Red Cross and its attitude of passive compliance with such demands concerning purely medical matters, and further be it

Resolved, That the Society state its belief that such persons who endeavor to arrest any aid that the medical profession is giving to our soldiers constitute a dangerous class giving aid to the enemy.

The delegate to the American Medical Association is instructed to ask the American Medical Association to take suitable action in this matter.

Your committee desires to fully endorse the sentiment of the resolution as undoubtedly in the best interests of humanity and medical progress.

As the Councilors of the American Red Cross have, however, found it expedient to act as they have, and we have the assurance that ample funds have been provided for essential research and no restrictions exist for the proper conduct of the work, your committee recommends that these resolutions be not adopted on account of any possible embarrassment to the Red Cross they might cause.

Dr. P. S. Roy, District of Columbia, moved as an amendment that the House of Delegates strongly endorse the use of animal experimentation for saving the lives of our soldiers and proclaimed all who are opposed to such animal experimentation belong to a dangerous class and aid the enemy.

Seconded by Dr. G. F. Cott, New York.

After discussion by Dr. H. M. Brown, Wisconsin; Dr. Thomas S. Cullen, Maryland; Dr. Alexander Lambert, New York; Dr. Torald Sollmann, Ohio, and Dr. John D. MacLean, Pennsylvania. Dr. M. L. Graves moved that the amendment be laid on the table.

Seconded and carried.

It was then moved that the report as amended be adopted as a whole.

Seconded and carried.

Report of Reference Committee on Legislation and Political Action

Dr. M. L. Graves, Texas, chairman, presented the report of the Reference Committee on Legislation and Political Action as follows:

Your committee has carefully considered the report of the Council on Health and Public Instruction. The enlistment of three of the five members of the Council in war service and the engrossment of the remaining two in state health work and cooperation with the federal Health Department has necessarily greatly restricted the activities of the Council; but the service rendered the public is still of importance and deserves our commendation. It is believed that the organization should be continued and proper appropriations made by the Trustees not only for the perpetuation of such work as may be done during the war, but for enlarged usefulness after the war. The public mind is now and will in all probability continue to be more receptive of health propaganda than ever before. The removal of physicians and nurses in large numbers from the communities of our country makes it imperative that health conditions be more carefully guarded, and we think the organization of home nursing and sanitation now being undertaken by many hospitals and women's organizations will be very helpful in public health education. Moreover, new and revolutionary processes of disease prevention and health protection are being constantly developed by the experiences of all the nations engaged in the war, and this information comes at a time of intense public interest and will find a more ready acceptance and adoption. The committee believes and therefore recommends that the work of this Council be continued as far as possible, and that sufficient financial provision be made therefor. Careful consideration has also been given to the three resolutions pertaining to women physicians introduced by Smith, Wetherill and Kress. The committee is of the opinion that the very character of military service and women's natural limitation for such service must require wise discrimination in their employment in war work. The principle of equal rank and pay for equal service is inherently just without regard to sex, and the committee feels this should be unhesitatingly approved by the House.

We therefore recommend that the resolutions offered by Wetherill as a substitute be approved with the following amendment. In the last paragraph use the words "Surgeon-Generals of the Army, of the Navy, and of the Public Health Service to authorize the employment of such unselfish women physicians in the service of the government in any of the many fields for which they are especially fitted by natural ability and training and that when so employed, adequate rank and pay be provided in every way equal to that of men similarly employed."

Resolution by Harris of New York pertaining to patent and trademark laws is approved.

Respectfully submitted,

M. L. Graves, Chairman,
A. E. Bulson, Jr.,
George H. Kress,
Southgate Leigh,
E. E. Harris.

Committee on Legislation and Political Action.

The committee appends thereto copies of the resolutions referred to in their report which were submitted, respectively, by Drs. Kress, Smith and Wetherill.

RESOLUTION INTRODUCED BY DR. GEORGE H. KRESS

Whereas, Women physicians in Great Britain, France, Russia, Serbia and Germany have performed invaluable services during the present war, services which have been signally recognized by their respective governments; and

Whereas, In the United States there was a large number of women physicians fitted and equipped to render equally valuable service, and to render service as efficient and valuable as can be rendered by men physicians, not only as anesthetists, radiographers, and hospital and laboratory directors, but also as surgeons, now therefore, be it

Resolved, That the Medical Association of the State of California express its desire that the American Medical Association do all in its power to further the utilization of the service of women physicians of the country as members in full standing of the Medical Section of the Officers' Reserve Corps and United States Public Health Service.

RESOLUTION INTRODUCED BY DR. E. O. SMITH

Whereas, There are at this time 5,124 women physicians in actual practice in the United States; these having graduated from recognized medical colleges and presumably qualified to practice medicine; most, if not all of them, having signified their readiness to do war work either at home or abroad;

Whereas, There are at present many women physicians, who have especially fitted themselves to do the kind of laboratory and research work for which the government is now fitting men at a great expense of time and money;

Whereas, The sixty-five American women physicians who are now working under the Red Cross in the war zone with many other women physicians from Great Britain, France, Russia and Italy have demonstrated that it is possible for women to endure the hardships of life in the war zone and still do creditable work;

Whereas, Our highest and most patriotic duty at this time is conservation, and the indiscriminate sending abroad of women physicians to do work other than under government supervision and direction is a pernicious waste of money, time and service; therefore be it

Resolved, That we, the members of the House of Delegates of the American Medical Association in session at Chicago, June 10, 1918, hereby recommend that the President of the United States, the Secretary of War and the Surgeon-General of the Army appoint women physicians to the Medical Reserve Corps of the United States Army on the same footing and with the same rank and pay as men.

RESOLUTIONS INTRODUCED BY DR. WETHERILL AS MODIFIED BY REFERENCE COMMITTEE

Whereas, The nation is at war and all our resources and energies must be devoted unreservedly to the winning of the war, wherever they may be made available, and

Whereas, Many of our women physicians have distinguished themselves by giving to the government and to the cause of humanity most unselfish and capable service in the fields of work for which they are particularly adapted and trained, and

Whereas, These critical times demand universal sacrifice and individual readiness to serve in any field in which one may be most useful regardless of official recognition or reward, and

Whereas, Thousands of loyal Americans are serving our country without adequate pay or appropriate place or rank, therefore, be it

Resolved, By this House of Delegates of the American Medical Association, that we wish to express our appreciation of the unselfish sacrifices so many of the women physicians of America are making, and, that we honor those who have so employed their skill and energy in our common cause; and furthermore be it

Resolved, That we petition the President of the United States, the Secretary of War and the Surgeon-Generals of the Army, of the Navy and of the Public Health Service to authorize the employment of such unselfish women physicians in the service of the government in any of the many fields for which they are especially fitted by natural ability and training and that when so employed, adequate rank and pay be provided, in every way equal to that of men similarly employed.

Report of Reference Committee on Reports of Officers

Dr. H. G. Wetherill, Colorado, chairman, presented the following report of the Reference Committee on Reports of Officers:

Your committee is prepared to make only a partial report on some matters, and as others are regarded of such great importance, we ask for more time to consider them.

Regarding the report of the Secretary, your committee desires to refer to a matter which has already been referred in this morning's session, namely, that which pertains to an Ad-Interim Committee. We find in the report of the Secretary under date of Oct. 19, 1917, the following report of the Board of Trustees was submitted by the Chairman of the House of Delegates and the Secretary to the Members of the House of Delegates of the American Medical Association and was adopted unanimously by a postal vote, 116 votes having been cast. The Secretary recommends that action be taken by the House of Delegates at its annual session to ratify this action of the Board of Trustees and to continue this committee with power to act for the Association in all matters pertaining to placing the Association at the service of the government.

Your committee recommends, therefore, the ratification of this action of the Board of Trustees, and I move that the ratification be made by the House of Delegates and the power of the committee be endorsed.

Seconded and carried.

In the report of the Board of Trustees we find several matters which we believe should be endorsed by the action of the House of Delegates. The Propaganda Department under the Board of Trustees with reference to quack advertising, and so forth, has commended itself to your committee, and we desire to recommend it to the House for endorsement.

Furthermore, with reference to the disposition of law suits, we think the Board of Trustees should be congratulated on the excellent results attained in the various law suits, particularly the Lydston suit, which has gone through the courts for a long time before it reached the American Medical Association, and we recommend that the House of Delegates approve the work of the Board of Trustees in this particular.

The most important of all is the work of the War Committee which the Board of Trustees has carried out. Your committee feels that the war work of the Board of Trustees has been very efficient, and we recommend for approval by the House of Delegates the report the Board of Trustees made regarding the work in connection with the war.

I move you, sir, that these recommendations be adopted by the House of Delegates, and that the Board of Trustees be commended for the excellent work done in these various particulars.

Motion seconded by George A. Moleen, Colorado, and carried.

It was moved that the report be adopted as a whole.

Seconded and carried.

Under the head of "new business," Dr. M. L. Graves, Texas, presented, at the request of William G. Priester, a communication relative to insignia for physicians' automobiles so as to distinguish them from other automobiles, and moved that the communication be referred to the Board of Trustees for consideration.

Seconded and carried, and the communication was so referred.

Dr. Rock Sleyster, Wisconsin, moved that the election of officers be held Thursday at 10 a. m. instead of in the afternoon at 2 o'clock.

Seconded by Dr. C. P. Meriwether, Arkansas.

Dr. Stewart R. Roberts, Georgia, moved to amend that the House of Delegates meet at 8 a. m. Thursday.

The amendment was seconded, accepted, and the original motion as amended was put and carried.

Report of Reference Committee on Miscellaneous Business

Dr. Charles E. Humiston, Illinois, chairman, presented the Report of the Reference Committee on Miscellaneous Business in regard to the following resolution offered by Dr. John Ridlon:

Whereas, The partial inventory of our national health made possible by the physical examinations under the Selective Draft Act showed a large percentage of our young men unfit for military service, and, further, that as most of these disabilities are curable, the American Medical Association is prompted to speak formally on this subject; and

Whereas, In view of the wonderful mental and physical benefits which have been manifested in the young manhood of America through intensive military training in the National Army cantonments; and

Whereas, Knowing that this training has done much to inculcate the knowledge and value of sanitation and personal hygiene in the individual; therefore be it

Resolved, That the American Medical Association in annual convention assembled urges the early adoption of a permanent national policy of universal military training for all young men before the right of suffrage is granted them.

Your committee recommends the adoption of this resolution.

It was moved and seconded that the resolution be adopted as recommended by the committee. Carried.

Regarding the resolution offered by Dr. Kelso, which reads:

Whereas, The medical profession of America is called on to do its duty inherent in those rights vouchsafed by our common constitution, with the innate idea and belief that our membership constitutes true patriatism and, that we as men of a high calling are entitled to equal standing with the profession in all parts of the world; therefore be it

Resolved, By the American Medical Association, the representative organization of the one hundred and forty thousand physicians of America, that we unqualifiedly endorse the proposed Medical Officers Law now before Congress, known as the Owen-Dyer bill, and urgently request its immediate enactment into law.

Your committee recommends that this resolution as rewritten be adopted, namely,

Whereas, The medical profession of America has been called on to do its duty in the present crisis and

Whereas, The physicians of America are entitled to equal standing with the profession in all parts of the world, therefore be it

Resolved, By the American Medical Association, the representative organization of the physicians of America, that we unqualifiedly endorse the principle of the Owen-Dyer bill, and request Congress to take prompt and favorable action on this measure as it has been framed by the Senate Subcommittee.

I move its adoption.

Seconded by Dr. G. F. Cott, New York.

After discussion by Dr. H. M. Brown, Wisconsin; Gen. Robert E. Noble, District of Columbia, and Dr. Miles F. Porter, Indiana, the amended resolution was adopted.

Dr. Thomas S. Cullen, Maryland, offered the following resolutions and moved their adoption:

To the President of the American Medical Association and Members of the House of Delegates:

The following resolutions are herewith submitted for your consideration:

Whereas, In accordance with Army regulations, Major-Gen. William C. Gorgas, now Surgeon-General of the United States Army, will reach the prescribed age of retirement in October, 1918; and

Whereas, By virtue of his scientific attainments and his statesman-like vision he has proved himself eminently qualified not only to meet the extraordinary exigencies of the present situation, but also to plan with great foresight for the future development of the Medical Department of the Army; and

Whereas, By his conduct of affairs and by his character as a man he has gained the admiration and complete confidence not only of the medical profession of the country but of the civilian population as well, be it therefore

Resolved, That it is the sense of the American Medical Association, now in session in Chicago, Illinois, that it would be for the best interests of the nation, if General Gorgas be continued in his present office as Surgeon-General of the United States Army, and be it further

Resolved, That this expression of appreciation and confidence be communicated to the President of the United States.

Motion seconded by Dr. Wilmer Krusen, Pennsylvania, and carried.

Report of Reference Committee on Miscellaneous Business

Dr. Charles E. Humiston, Illinois, chairman, presented a report of the Reference Committee on Miscellaneous Business in regard to the resolution offered by Dr. M. L. Graves, Texas, which reads:

Resolved, That the House of Delegates of the American Medical Association is opposed to the use or prescription for use of all drugs, chemicals, medicines, medical and surgical instruments and supplies of German or Austrian origin or ownership. That the medical profession be urged to cease their purchase or use, and

Resolved, further, That the medical and lay press of America be requested to discontinue advertisements of all such articles to the profession and to the public.

Your committee recommends the passage of this resolution, and I so move.

Seconded by Dr. Wilmer Krusen, Pennsylvania.

After discussion by Drs. Torald Sollmann, Ohio, and Charles E. Humiston, Illinois, Dr. H. Bert Ellis, California, moved that the resolution be laid on the table.

Seconded and carried.

Dr. J. B. Blake, Massachusetts, offered the following resolution. The house suspended its rule, and, on motion duly seconded and carried, adopted the resolution.

Resolved, That the House of Delegates of the American Medical Association is in sympathy with and endorses the general outline of the plans of the Surgeon-General for the creation and operation of an army school of nursing.

Dr. V. G. Vecki, California, presented a resolution relative to establishing an undergraduate class of medical students, which was referred to the Reference Committee on Legislation and Political Action.

Dr. W. T. Wootton, Arkansas, presented the following preambles and resolutions, which were referred to the Reference Committee on Amendments to the Constitution and By-Laws:

Whereas, We recognize the liberty enjoyed by the practicing physician of today in that he may follow along broad lines in the management of the sick entrusted to his care and that we would not deprive him of one iota of that liberty; and,

Whereas, We believe that the mobilization of our Army and the experience of the hospital units show it to be to the best interest of the patient that he receive at all times a more uniform treatment, one recognized and endorsed by the best medical minds of today; and

Whereas, At present there is no committee or council within our ranks to give such endorsement; therefore, be it

Resolved, That the President of the American Medical Association, the Chairman of the House of Delegates, with the chairmen of the various sections be and they are hereby appointed a standing committee to select a Council on Standardizing Surgical Procedures and Medical Practice, the number and personnel to be entirely at the committee's discretion, power being hereby given them to fill vacancies or enlarge said Council as necessity may demand; and further appoint an Advisory Committee to said Council should they desire. Be it further

Resolved, That no action of this Council shall be deemed binding on any physician or surgeon, that no effort shall be made to foster any creed, sect, dogma or other stigma; the object being strictly to weed out fallacies, gather data, and give the profession an unbiased report as to efficacy of procedures in order that we, the rank and file, may not linger in doubt as to what may be considered judicious, conservative practice.

Dr. Torald Sollmann, Ohio, offered the following resolution, which was referred to the Reference Committee on Miscellaneous Business with the request that the committee report on it as soon as possible:

Resolved, That the American Medical Association calls on its members to further the conduct of the war by confining their prescribing to products owned and manufactured by loyal citizens of this country or of our allies, whenever the interests of the patients permit.

Dr. Charles E. Humiston, Illinois, chairman, reported that the Reference Committee on Miscellaneous Business recommends the adoption of the resolution offered by Dr. Sollmann, and he so moved.

Motion seconded by Dr. Lewis S. McMurtry, Kentucky, and carried.

Dr. Southgate Leigh, Virginia, presented the following resolution:

In order that the tabling of the resolution offered by Dr. Roy in regard to animal experimentation shall not be misconstrued by the press and others, it is moved that the Reference Committee on Hygiene and Public Health should be instructed to frame and present a resolution reaffirming the belief of this Association in the efficacy and necessity of animal experimentation.

The chairman stated that the committee would be so instructed.

It was moved that the chairman of the House of Delegates be authorized to transmit to the proper reference committee any resolution which may be received from the sections prior to the meeting on Thursday morning, so that the committees could bring in such resolutions to the House of Delegates for action.

Seconded and carried.

Dr. J. W. Schereschewsky, U. S. P. H. S., moved that in view of the fact that industrial medicine and surgery is now a definite branch of medicine, the question of proper designation of industrial physicians and surgeons be referred to the Reference Committee on Sections and Section Work for a report on Thursday morning.

Seconded and carried, and the motion was so referred.

On motion, which was duly seconded and carried, the House of Delegates adjourned until 8 a. m. Thursday.

THE SCIENTIFIC ASSEMBLY

THE OPENING GENERAL MEETING

Tuesday Evening, June 11

The opening meeting of the Association was held in the Auditorium theater and was called to order at 8:15 p. m., by the President, Dr. Charles H. Mayo, Rochester, Minn.

Dr. John Timothy Stone delivered the invocation.

Almighty God, our Father in Heaven! Thou who art guiding this nation, and Thou who hast guided this nation, as history has spoken, we thank Thee for what Thou art, and for what Thou hast been, and for what Thou art to be. And we thank Thee for our land with all its splendid enthusiasm for righteousness, justice and truth, and all the splendid power, all the freedom of the heart and conviction of soul; for that which is true and godlike. And now tonight as this assembly meet together in this our city, and as we welcome them in the spirit of gratitude and earnest, thoughtful pride, we pray that Thy blessing may be with all of their deliberations and that their good effect may extend even to France, and to the uttermost parts of the world. We thank Thee that the love of service belongs with the heart of faith. We thank Thee for the courage and for the skill and the faithfulness and the patience of the men of medicine and surgery whose life is not held dear in any cause where they may give their service and their heart to the nation and to the nations warring in the strife for freedom. O God! We thank Thee for what they are with the men at the front. We thank Thee for what they are with those who are training here at home. And we do pray, O God, at this time a signal and earnest devotion to our country, of honest and holy patriotism; that they may prove that we as a people in this land are grateful to Thee, Almighty God, for the service and the devotion and the faithfulness of these men who are doing so much today to make our cause a permanent cause, and to make the lives of our sons and the life of this nation all that Thou wouldst have it. And, O God, we close our petition with this great world prayer: We do not ask Thee, Almighty God, to be on our side. But we pray Thee, Eternal One, that we as a nation, and our allies may more and more, in the cause of freedom and righteous liberty, be on Thy side, where Thou hast placed us. And O God, be with us as we unite in the prayer that the Great Physician, Thy Son, taught us:

Our Father who art in heaven, hallowed be Thy name. Thy kingdom come. Thy will be done on earth as it is in heaven. Give us this day our daily bread, and forgive us our trespasses as we forgive those who trespass against us. Lead us not into temptation, but deliver us from evil. For Thine is the kingdom and the power and the glory forever. Amen.

Before the opening of the meeting the distinguished visitors from abroad, the ex-Presidents of the Association, the Surgeon-Generals of the Army and Navy and other government officials, together with the physicians in uniform, including the physicians' band from Fort Reilly, occupied the stage. The national anthem was played by the band while the audience stood, the officers at salute.

Addresses of Welcome

Dr. E. W. Fiegenbaum, president of the Illinois State Medical Society, was introduced, and welcomed the members on the part of the profession of the state.

ADDRESS OF WELCOME BY DR. E. W. FIEGENBAUM

Mr. President, Fellows of the American Medical Association, Ladies and Gentlemen: The medical profession of the great state of Illinois sends you a most hearty greeting. Speaking in their behalf and in behalf of the organized medical profession, I bid you a most hearty welcome. We are not all here tonight. Nearly 2,000 of the foremost medical men of Illinois have volunteered in the service of their country. (Applause.) They have commissioned me to speak for them this evening. They have projected themselves over thousands of miles of land and water and are here with us tonight in spirit, giving you their greetings. They are in the camps and cantonments in this country. They are on the battleships and transports on the high seas. They are in the base hospitals, and on the firing line "over there," each one in his own way doing his duty by his country in a medical way. They have left their families and their homes; they have left their business interests; they have left the prominent places that they have occupied in their respective communities and have gone to the front, eager and anxious to serve the government when it called; they have left safety and security and are braving disease and death. All hail to the medical profession that has laid its all on the altar of its country. (Applause.)

It is very appropriate and pleasing to us of this state that your annual meeting should be held here this year, for this is our centennial year. All over the broad prairies of this state great preparations are being made to celebrate this event in a befitting manner. But medicine in this state is older than that. The nineteenth century was only 2 years old when in 1802 Dr. George Cadwell left his home in Kentucky, came down the Ohio River and up the Mississippi River, and landed in Madison County, Ill., just opposite the present site of St. Louis. He at once laid the foundation of organized medicine, because we find that this state was only about 4 years old when the first medical society was organized, and a little later on we even find an attempt made to register the physicians and surgeons of the state, foreshadowing our present registration and education. Those old pioneer physicians worked faithfully and hard. They upheld the banner of scientific medicine to the very best of their ability, and to the standard of scientific knowledge which they had at that time. Following this came decade after decade of their worthy successors, always upholding the principles of scientific medicine, upholding the standard of physicians practicing in the state of Illinois; and it can be truly said that at no time was there any state that exceeded the state of Illinois in its organized medical profession.

With the dawning of the twentieth century greater steps were taken; more earnest efforts made, eradicating medical schools that were not up to the standard and purifying these schools by consolidation and elimination. (Applause.)

The latest achievement of the medical profession of this state was to give us through the legislature one of the best medical practice acts found in any state. We find the medical profession always laboring faithfully and hard to uphold and to increase the standards of medical education at all times. These are the men we represent; these men that laid the foundation; these men that built on that foundation and erected this magnificent superstructure; these men, who, guided by high ideals, will carry the banner of organized medicine and put it on the highest pinnacle; and it is not only a possibility, but it is almost an assured probability that these men will, in the near future, bring within the confines of this state the medical center of the universe. (Applause.) These, ladies and gentlemen, are the men who have bid me to say, "You are Welcome." (Applause.)

President Mayo then introduced Dr. Charles E. Humiston, president of the Chicago Medical Society, who delivered the following address:

ADDRESS OF WELCOME BY THE PRESIDENT OF THE CHICAGO MEDICAL SOCIETY

Chicago is proud to be host to such distinguished company. This is the home town of the American Medical Association. There is perhaps no city on this continent that does not in some degree share in this honor, as this greatest of all medical organizations is literally at home everywhere, but it is more at home in Chicago than in any other city.

The American Medical Association ranks high among the resources of the country. It is the one great comprehensive democratic medical body to which every reputable physician may belong and for the most part does belong.

As the individual turns to his physician for relief from the common ills of life, so the nation, in its present time of peril, in confidence is depending vitally on its physicians, on the organized medical profession, the American Medical Association, and in this confidence the nation will not meet disappointment.

Three thousand and more members of the Chicago Medical Society greet you with a cordial welcome. The shades of its former presidents, the immortals, Davis, and Senn, and Fenger, and Murphy, look down with favor on your coming and join with the guiding living spirits of the present, Quine and Billings, in bidding you Godspeed in your noble work.

The Chicago profession trusts you will find its atmosphere conducive to achievement, an atmosphere just now surcharged with every form of activity that should characterize a community wholly awake to its proper part and place in the world's war for decency in which we are now engaged.

Our members are not all here to greet you. Many are now engaged in building and conserving the military strength of our beloved country, and not a few who were thus engaged have already gone beyond the zone of combat to the "undiscovered country from whose bourne no traveler returns." May their sacrifice and their example inspire us to renewed endeavor.

Eminent visitors from afar, from Belgium and from France, from Great Britain and from Italy, from Australia and from far away New Zealand and nearby Canada: Chicago extends to you the right hand of fellowship. We stand by you. We stand with you; and now while the stars in our service flags are turning from blue to gold, we pledge again our allegiance to the cause you represent.

And to the Fellows of the American Medical Association, from the youngest recruit just faring forth, to the illustrious Surgeon-Generals of Public Health, of the Navy, and of the Army: Welcome! Chicago is proud to be host to such distinguished company.

Mr. Bob Dyrenforth sang "Keep the Home Fires Burning," accompanied by the band.

President Mayo in a few felicitous phrases in each instance framed and oriented for the audience the distinguished home and foreign visitors present at the meeting and occupying the stage, who were received with tremendous applause from the large audience. They were, in the order of their presentation, Surgeon-General Gorgas of the Army, Admiral Braisted, Surgeon-General of the Navy, Sir James Mackenzie of London and Scotland, Sir William Arbuthnot Lane, England, Major Rist and Major De Helly of France, and Colonel Bruce, representing Canada.

Hon. Frank O. Lowden, Governor of Illinois, was introduced and said:

ADDRESS BY THE GOVERNOR OF ILLINOIS

Mr. President, Distinguished Representatives of Our Allies and the Champions of Civilization, Members of the Medical Association, and Ladies and Gentlemen: It is a very great honor which you and your organization, Mr. President, have conferred on me tonight. Never, I suppose, in the history of this country has so distinguished a body of the medical profession been gathered together as in this hall tonight. (Applause.)

It is not only an honor which we appreciate, but it is an honor which I covet, because I want to say to the American Medical Association that we of Illinois are under very great obligations to the Association. During the last eighteen months we have been reorganizing the health agencies of our state to the end that we might enlarge their scope and increase their efficiency. In every step we have taken we have had the hearty sympathy and cooperation of the American Medical Association. And when we have sought to elevate the standards of the profession they again have assisted us. I have discovered from time to time that whenever any man in our state thinks he has a constitutional right to practice medicine, provided only he frequented some place, somewhere, with the magical words "medical college" written above the door, that man is against your Association. (Applause.) And again, when some of our citizens who have a license to practice medicine feel that it gives them the right to prey on the helpless and the unfortunates of society, those men have been against the American Medical Association. (Applause.)

It is a great pleasure tonight to admit the obligation under which Illinois, the whole country and the civilized world are to the medical profession of America for the unselfish way in which, forgetful of all selfish interests, it has thrown itself heart and soul into the greatest war the world has ever known. (Applause.) I am here tonight to explain to you why it is that the American physician and surgeon has been so keen to appreciate the significance of this colossal conflict. He is different from the German professional man because he has never come under the influence of "kultur." He is still simply under the influence and guided by the old fashioned thing we call civilization. (Applause.) And sometimes I think that we of America, as well as our allies, do not dwell enough on the contribution which our scientific men have made to civilization, and they are likely to take far too much for granted of the claims which the autocratic central powers make. I want to remind you tonight that "kultur"—I do not know whether I can pronounce it right—I hope I may never learn it well enough to practice it—(applause) is based on the theory of an English scientist; the whole doctrine is based on the biologic law of the survival of the fittest. But while that was an Englishman's philosophy and invention, the Germans misapplied it when they brought it into their own country. The Englishman knew that while it was a correct law of biologic existence, the law of the survival of the fittest, they also knew that that law did not respect the moral and spiritual laws of the universe, which in the end control the physical laws. (Applause.) The Germans adopted this law in their philosophy and then announced that not only were the strong alone to survive, but that they were to rule the world. They then discovered that what we call moral laws have become outgrown, and they developed their superman. But all the while the scientists of the rest of the world knew that that law had *nothing* to do with the law of right and wrong. All the rest of the world knew that the moral forces they understood were the final arbiters of the universe and that therefore the "kultur" of the German is but a materialistic philosophy founded on a half truth, and was possible only by the exclusion of other truths. (Applause.) But to the physicians of England and Scotland, of France and Italy and to American physicians—not the physicians of Germany—but to the physicians of the rest of the world the biologic truth meant to them that it was their duty and only by removing the causes of weakness and disease, by improving the environment, by aiding and tenderly protecting the weak and lifting them up, could they give expression both to the moral laws of the universe and to the biologic laws. That is what they have been doing all these years, while "kultur" applied to simple man destroyed the weak, destroyed the unfortunate, blotted them out of existence, and thus made the superman supreme. That is the difference that has come in the last half century in the development of "kultur" as compared with our own civilization. (Applause.) So tonight it is a great pleasure to be here to honor that noble profession, because not only does it regard the physical, but it tenderly ministers to the mental and the moral. It is busy all the while in devising ways and means by which the weak may become strong, by which those who fall may be made to stand; in other words, the physician of civilization, as contrasted with the physician of "kultur," shares with the minister of religion in the tenderest ministry which comes to the human heart and the human home. (Applause.)

I was very much interested in what was said about the number of physicians who are engaged in this war, and it heartened me more than anything else, because with that thoroughness which has distinguished the Germans they have methodically and precisely rated the value of every man engaged in the service. They found that a physician is the equivalent of 500 men in the ranks. The American Medical Association is going to contribute something like 40,000 of its men to the Army, and a simple calculation will show that the Association will contribute to the war the equivalent of 20,000,000 men. (Laughter and applause.) If these men are directed by the genius of General Gorgas we know what the results will be, because this is not the first enemy that General Gorgas has met. (Applause.) I refer to his work on the Panama Canal. His enemy there was not Germans, but mosquitoes, but they are very much alike in many respects. (Applause.) They have the same notions precisely of the rules of civilized warfare. And the mosquito is *no* enemy to trifle with. The mosquito in the past in Panama succeeded in doing what the German armies have not done *in* four years, and that is that the mosquitoes of Panama drove the French out, but the French so far have held the German armies. (Applause.) And when I speak of France it is always reverently. The great masters of French romance have delighted the world for generations with *their* marvelous creations; but not one of her great masters of romance has ever written pages one-twentieth as thrilling as her soldiers in the field have written in fact during the last four years. (Applause.)

And now another difference between the civilization of the allies and the "kultur" of the central empires: It is true that "efficiency" is the word that is oftenest on our enemy's lips, and it must be admitted that they appropriate the inventions and discoveries of other countries with consummate skill and with fine results. But after all it is the free countries, it is France and England and Italy and America that have made these discoveries. I read this evening that smallpox had broken out in the Krupp works, and today they are vaccinating these men. They are vaccinating their population, not with anything that they discovered, but because of the discovery of a great English physician, Sir William Jenner. And the anesthetics with which Germany soothes her wounded and dying soldiers were not the discovery of German scientists, they were the discovery of American scientists. Again, the only thing that has enabled them to keep up this war so long was another discovery of the modern antiseptic treatment of wounds, and that again was not found by German "kultur," but was the discovery of an English physician and scientist (Applause.) And so they have been able for four years to hold the world at bay because of the discoveries which free professional training and genius have given to the world. They have taken these products of civilization and with them they seek to destroy civilization itself.

I read last night, and I read with a good deal of feeling, the statement made by Dr. Esther Lovejoy, a physician who has recently returned from France, that Germany did not take the women who were mothers of two children back to their land or under their care, because they only wanted children and mothers of children with German fathers; and that statement I have no doubt is true and is justified by the "kultur" which they have been preaching for forty years. Because if all that is needed is strong men physically, if in the end the world is to belong to might and might alone, and if "kultur" must be made to spread around the world before the stream is clear, why is it not logical and consistent? If they have the courage of their convictions, the thing to do would be to take the defective, the deformed and the helpless and exterminate them, because in that way they will have a stronger race of men, and they have learned that they cannot impose their "kultur" on foreign races. Just as sure as they win this war Germany will not attempt to convert the people of other races to their "kultur"; they will exterminate the men and reduce the women to slavery in order to make "kultur" triumphant around the earth. That is the logic of the most damnable philosophy that has ever been evolved from the brain of man. The one single notion in the kaiser's savage brain, so deadly to everything in civilization that we hold dear, is this "kultur" which, if they win this war, will overshadow and shock the world. I want to tell you that if they win—and I am speaking with all the seriousness with which I ever spoke in all my life—the superman, the German, will become the superfiend of all the rest of the world. (Applause.)

I saw the other day that our government had discovered circulars of propaganda in Spain to intimidate that nation against entering the war. They gave out a statement of what was done to Belgium, because they said Belgium was foolish enough to fight after she had been beaten; and they recounted all the things they had done to France. They catalogued the spoils they had taken *in the war; not simply military spoils*, but watches and spoons and *other articles of domestic use*. I recall that they *classified the articles—so many first class* watches, etc. That is *German thoroughness*; that is "kultur" *practically* at work in the field. And so many spoons. And they closed the list with the statement that they had also captured over 500,000 bottles of champagne. They went on with another list containing the churches and cathedrals they had destroyed; and I could *not* help but say of that list, "How logical and thorough these wonderful people are; they capture and keep the spoons and the champagne, and they destroy the churches and cathedrals." And why should they not? Every church with its spire pointing heavenward was a rebuke to their materialistic creed, to the people who had plundered for centuries men, women and children who sought sanctuary and quiet and inspiration. Every cathedral that was standing was an act of reproach to that German god whom they worship and whom they have brought out of the dark German forests of 2,000 years ago. So, if we only know what this war means, we will win it. (Applause.)

We have had dark days, indeed; and I want to say in this presence tonight that the darkest hour to me came a few weeks ago in the thought that the gallant English and the gallant French armies would be separated and destroyed. It was the darkest hour for this reason and for this reason alone: We not only might have lost all; England and France would, too, have lost all—all but honor and the privilege of dying free men rather than to live slaves—and the thing that depressed me was that America was not there with a million men to stand between the heroic English and French armies. While we would have lost no more than they, they would have had the supreme satisfaction of knowing that they had done all they could and those that died had sought an honored grave rather than a cowardly peace. (Applause.)

Now that that danger is past, we still are confronted with dangers many and great. I do not know as I speak what the fate of our allied armies is tonight. It may be, so far as I know, that these horrid huns will reach and seize and despoil Paris. What then? We shall go on. (Applause.) I do not believe they will, but it may be that they should succeed in separating the English from the French; but if they do (which God forbid), and they drive the English forces into the Channel, and if they annihilate the French army before the campaign is over, England, France, Italy and America will still go on. (Cries of "Good," and applause.) Germany may seize the body of France, but never her indomitable soul. We will all go on until justice comes, and until this horror, war, is for all time put to rest. (Applause.) If I have any influence with my people I want to say that not only would these catastrophes not end the war, but even if—which we cannot believe—the German fleet should sail out some night and destroy the allied fleet, we still would go on, because the spirit of France and England and Italy and America still would live. (Applause.) And if Germany under her piratical flag—and I use that term advisedly: she ran up the black flag of the middle ages—if these fleets under the black flag entered the harbor of New York and conquered that beautiful metropolis of the new world, still the spirit of England and France and Italy and America would go on, and I want to say that for myself there is no point that can come, there is no reverse which can be met by our armies, which can conquer us, because we now have, we shall have, and in any crisis that may come we shall fight and die like men. He who would not die like a man rather than live a slave has no place in any of these United States.

Just one word more: You will hear from now on insidious whispers of peace; but listen not. Russia! Russia was seduced by the word, and you know what happened to Russia. Russia at peace with Germany has suffered worse than she ever suffered at war, and so would we, and so would all the world, until a peace can come by victory and victory alone. (Applause.)

When they talk to us of peace with these crimes unrepented, when they talk to us of peace and there is no possible guarantee of peace, let us heed them not. Do you know what I think we shall tell them? I think we shall say, "Go and tell that to the marines," and they know now where the marines are and that the marines will be the American answer to their insolent proposition. (Applause.)

President Mayo said: It is a great honor to be president of this Association, and that honor I feel slipping from me, and feel that it will wholly slip away in about eight minutes.

Before terminating my office, I wish to speak briefly upon some of the phases of the world's topic in its relation to medicine. The part played by medicine has never been recognized as so responsible as it is today. The Medical Department of our Army in surgeons, enlisted men, nurses and aids numbers over one-tenth of the Army. I believe it is conceded as the best organized of any department in France. The work of organization was begun a year before war was declared, and the wonderful results of the work of organized medicine in the protection, prevention of disease, care of wounds and sickness with the salvage has never before been approached even in civilian life.

The peculiar type of the warfare conducted for the past four years has been scientifically dealt with by medicine from every angle, and while spectacular heroics are noted in the Army in small combats and large drives, they are the everyday portion of the medical department as the doctor carries on his routine work.

The National Medical Museum is now a comparatively small institution, barely existing on the meager appropriation of $10,000, lacking in index, supplies and general educational phases. It, however, can be made one of the greatest institutions for medical instruction in the country. Very early as we entered war, the written medical and surgical history of it was planned, and later a committee was formed by the Executive Board of the Council of Defense to develop the tangible medical and surgical records of the war for the National Medical Museum, under the Surgeon-General, the collection of specimens, types of weapons, missiles and the kind of wounds created by them, and the destruction made by each. This committee consists of myself as chairman, Colonel William Welch and Colonel Victor Vaughan as committeemen, with Colonel Owen, the curator of the Museum. The committee appointed Dr. Louis B. Wilson as Foreign Director of the work. There are artists, plaster and wax workers, also moving picture apparatus connected with this historical work representing the care of the soldiers, the prevention of disease, the surgical care of injuries and salvage of our casualties.

It is proposed that in the reorganization of the Museum that the double-headed monsters and curious anomalies of human form will be relegated to an inner room for medical study only, while the wonderful work in sanitation and hygiene, the protection and care of babies, the care of industrial workers will be shown in the main room.

What of the future of medicine in Europe? England has just started her medical schools with a limited number of students after they were closed for four years. France has not yet re-established her medical schools. After the war, is Germany and Austria to again become the European center for medical instruction? It is to be hoped, at least, not until it is earned. We are now raising funds with which to establish a Postgraduate Medical School in Paris under the auspices of an American Board to give the final training to our medical officers when sent to France. It is hoped the school can care for upwards of 1,000 surgeons. A third of the institution would be turned over for the use of France and two-thirds would be placed under the control of the Surgeon-Generals for the period of the war. There would be given the last word in military medicine. At the close of war to be presented to the medicine of France by the medicine of America as a permanent Postgraduate Medical School and headquarters for all nations. It is expected the institution will be connected with several of the larger hospitals and become the coordinating center for development of the National Medical Museum, Research Work, School of Language, etc.

Concerning medicine in our own country, it looms large and never was on such a safe foundation. In Washington, however, it is divided into many bureaus and boards, overlapping in responsibilities and duties. Yet, each is permanent as they are supported by funds or appropriations. The greatest is the Public Health Bureau under the Treasury Department, under Labor is Care and Protection of Industry and Child Welfare, under the Department of the Interior is the Care of the Insane not otherwise provided for and other activities, under Commerce is Census and Statistics, including Mortality Records, under Agriculture are the Pure Foods and Drugs activities, and there are many other smaller boards and bureaus, almost too numerous to mention.

The future goal of medicine, the establishment of a National Bureau of Health, to coordinate and centralize these great problems which so largely govern the health and happiness of our people will surely come, with the aid of the organization of medicine now developed, at the close of the war.

After the singing of America, led by Mr. Bob Dyrenforth, Chairman Mayo in introducing the President Elect said:

I wish to introduce to you one of the great surgeons of this country, a man who is known to us all for his surgical work, but whom we think of possibly more for what he has done in organizing medicine in the advanced position it occupies in this country today. I now present to you your next President, Dr. Arthur Dean Bevan.

Dr. Bevan read his address.

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Interesting official statistics have lately been made available from the Food Division of the Surgeon-General's Office of the War Department by Major Murlin.[1] It appears from these that our troops have the most liberal allowance of food among all the Allies' rations. The United States garrison ration calls for 4,600 calories; indeed, in the so-called modified garrison ration, 4,800 calories are provided. Among the food quota allotted to the British, Canadian, French and Italian troops the highest does not exceed 4,200 calories, the estimated value of the British field and trench ration.

Thanks to the unique food surveys now being made by the Food Division of the newly established Sanitary Corps, the average actual food intake in the training camps has been ascertained with considerable accuracy. The data from eighty-seven messes show a consumption of 4,000 calories a day, thus distributed between the groups of nutrients: proteins, 14 per cent.; fats, 30 per cent.; carbohydrates, 56 per cent. On this diet, supplemented by a certain consumption of food from the camp exchanges, the men, according to Murlin, have gained in weight, on an average, about 9 pounds since entering the training camps.

These figures indicative of an adequate energy allowance, to say the least, for the American soldier under the present regimen, deserve to be compared with statistics in related situations. A study of the dietaries of 110 families has indicated somewhat less than 3,200 calories as the energy allowance estimated on a "per man per day" basis. Of course the food requirement bears an inevitable relationship to the nature of the occupation or muscular activity of the individuals concerned. The American farmer — a worker of average intensity — is usually credited with a need of about 3,500 calories a day. The average actual food consumption gathered from 18,000 observations among munition workers in England, in 1917, was reported as 3,463 calories. There is, accordingly, no occasion to assume that the present ration of our forces in training is not liberal, from the standpoint of its energy content. The same feature of abundance characterizes its content of protein. Murlin's report indicates that whereas the British army allows 1 pound of meat per man per day, the French army ¾ pound, and the Italian army only ½ pound, our allowance is 1½ pounds. However, the actual consumption by our army up to the present time in the camps of this country does not exceed ¾ pound.

Much has been said about the subject of food waste in the camps and cantonments at a time when our civilian population is making great sacrifices in the direction of food economies. There has, undoubtedly, been a modicum of truth and likewise a measure of exaggeration in the statements circulated through hearsay reports. Without condoning any offense in this direction even in the early stages of large army organization — or lack of organization — there is reason to believe that such wanton waste has been reduced to an insignificant point. Conservation is being practiced under the critical supervision of the officers in charge. Not only a system of garbage inspection, but even the examination of the individual's dinner plate has been put into operation.

Even now, after only a few months of actual organization, we have, according to Murlin, the first instance in the history of warfare in which the actual amount of food consumed is estimated directly in the camp and in the field where the troops are operating. It is comforting just now, the nutrition expert of the Surgeon-General's Office reminds us, to remember that the status of the science of nutrition in America is fully equal to its status in the land of our enemies at the beginning of the war. If we fail in the trial that is on us, it will not be for lack of information. If we fail, he adds, to keep our civilian population properly nourished, it will not be because we do not know the functions of food, or because we do not know what foods are suitable. Likewise with the army.

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1. Murlin, J. R.: Some Problems of Nutrition in the Army, Science, 1918, 47, 495.

CORN IN THE WAR TIME DIETARY

In the shortage of wheat, which is likely to remain serious for some time to come, we shall inevitably turn for a substitute to corn, or maize, the cereal that is most abundant in this country. In practice, the admonition to "save the wheat" will be coupled with the inevitable necessity of eating something else. Corn is produced in such large quantities in the United States that only one sixth of the crop need be eaten in order to replace or save one half of the wheat crop. A recent writer[1] has stated that, if consumed as human food, a fifth of the total corn crop, or a third of what is suitable for milling, would set free all the wheat needed for our friends abroad and leave enough corn on the farms for the adequate feeding of all the live stock now on hand.

What are some of the objections urged against corn, both here and among the Allies? The foremost one, perhaps, is that of palatability, a feature associated with the culinary aspects of the diet. There is evidence on hand that the new interest in all win-the-war activities has given an impetus to the improvement of the cookery of corn products. Despite the aversion of the human palate to innovations in diet, it is not at all unlikely that the near future will see corn foods gaining widely in popularity throughout this country, in the southern parts of which they do not need any recommendation even now.

Another objection that has been urged concerns the quality of the protein and the deficiency in the inorganic salt content of corn. These factors might represent a real difficulty if maize formed the sole or even the major portion of the diet, as it sometimes is made to do in the ration of some of the domestic animals. One-sided dietaries, derived from single sources, are likely to prove inadequate in some details; but so long as the admonition to vary the intake and to use well selected supplements is not forgotten, this liability to harm is no greater with corn than with many other single foods. That man cannot live by bread alone is literally true.

Lately there have been reports of digestive disturbances attending the liberal use of corn in the diet. According to Sherman[1] as well as other observers, the exclusion of this difficulty, magnified perhaps by an apprehensive public, lies in proper cooking. Referring to the experiments in the laboratory of food chemistry at Columbia University he says:

> It is evident that corn meal, suitably cooked, can be substituted for corresponding wheat products even to an extent equivalent to the whole of the usual consumption of wheat in the dietaries of those who live largely on bread, without detriment to the nutritive value of the diet. When conditions are unfavorable or the subject is particularly sensitive to a change of food, a considerable substitution of corn for wheat may give rise to some discomfort in digestion; but in the three cases here observed, the nutrition of the body tissues appeared to be as well maintained as when the digestive process was entirely regular. It is confidently believed that suitably cooked corn products can enter into the dietary, even of those not accustomed to their use, in large proportion without any effect whatever on digestion. Nor need the palatability of such a diet suffer when even greater quantities of corn products are introduced in varied forms.

Above all, we need at this time to dispel the fear that corn and pellagra have a direct etiologic interrelationship. To quote Sherman again: If pellagra is due to faulty diet, the fault lies not in the use of corn, but in the fact that the diet contains too little of foods of other types.

FACTORS IN THE REGENERATION OF BLOOD

The factors that determine the regeneration of the blood after hemorrhage have by no means been satisfactorily ascertained. In some types of anemia, obstacles to the maintenance of the integrity of the red corpuscles undoubtedly exist. Hematolysis here plays an important part. In chlorosis the characteristic feature of the blood is the relatively small amount of hemoglobin in proportion to the number of the corpuscles. Apparently the fault lies in defective hematogenesis — in the inadequate manufacture of blood pigment rather than in either a destruction or a deficient formation of corpuscles. A few years ago the favorite hypotheses involved the part taken by iron in the formation of hemoglobin. But persistent lack of blood pigment in many cases certainly is something more than the expression of lack of iron; for iron therapy fails to produce the desired hematopoiesis in many instances.

It would seem most rational, as a preliminary to the attempted unraveling of the secrets of such complex pathologic conditions, to learn first of all what is involved in the more fundamental process of blood regeneration in simple anemia such as exists after uncomplicated hemorrhage. Whipple and Hooper,[1] of the Hooper Foundation for Medical Research at the University of California, have addressed themselves to this problem. As a result, they have ascertained that blood regeneration in dogs after simple anemia of definite grade can be influenced at will by various dietary factors. The curve of blood regeneration on a meat diet is very rapid, a matter of days or a few weeks, while the curve of regeneration on a diet rich in carbohydrates is very slow. In some of the animals on a diet of bread and milk it has required months for complete blood regeneration. Iron in the

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[1] Sherman, H. C.: Use of Corn (Maize) as Human Food, THE JOURNAL A. M. A., June 1, 1918, p. 1580. Sherman, H. C.; Wheeler, Lucille, and Yates, Anna B.: Experiments on the Nutritive Value of Maize Protein and on the Phosphorus and Calcium Requirements of Healthy Women, Jour. Biol. Chem., 1918, **34**, 383.

[1] Hooper, C. W., and Whipple, G. H.: Blood Regeneration After Simple Anaemia, I, Curve of Regeneration Influenced by Dietary Factors, Am. Jour. Physiol., 1918, **45**, 573. Whipple, G. H., and Hooper, C. W.: Blood Regeneration After Simple Anaemia, II, *Curve of Regeneration Influenced* by Starvation, Sugar, Amino Acids and Other Factors, ibid., 1918, **45**, 576.

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[1] Murlin, J. R.: Some Problems of Nutrition in the Army, Science, 1918, **47**, 495.

per hour, and in percentage in the urine. Most of these variations would wholly escape detection by qualitative methods.

In view of the known facts, Benedict urges the abolition of the term "glycosuria." "This word," he says, "was not created by the mind of man, but by the inefficiency of the copper tests. Glycosuria implies a sudden point at which sugar appears in the urine. Since there is no such point, the term glycosuria is without special significance and is misleading." Consequently the term "glycuresis," representing an increase rather than a new appearance of sugar in the urine, is proposed.

If we are to emphasize the continual existence of a glycosuria in man, what is to be said of the so-called tolerance for sugar? Assuredly there has been little agreement on this phenomenon in the past. The "tolerance" of human individuals for glucose on an empty stomach is commonly placed at about 150 gm. Taylor and Hulton[3] reported practically no limit to the tolerance for orally administered glucose in human subjects. Myers[4] found glycosuria following the ingestion of 75 gm. of glucose in a normal subject. According to the newer observations of Benedict and his co-workers, there is no absolute tolerance for carbohydrate except during the fasting state. Here it may reach an upper limit of 50 gm. of glucose; but feeding with either meat or a carbohydrate diet causes an increase in the sugar elimination.

The fact, Benedict concludes, that foods, even when free from any sugar, cause marked glycuresis must serve to emphasize the narrow margin of absolute sugar tolerance even in the normal individual. A certain portion of the sugar from starch or even from meat taken at each meal is waste sugar. This is not due to simple leakage through the kidney. The glycuresis is independent of urinary volume and follows a definite course, reaching a minimum during the fasting hours. Carbohydrate stands apart from other foodstuffs in that the normal organism fails to utilize it completely, even in physiologic quantities. Therefore, Benedict adds, the unique disease, diabetes, springs from seed ever present in the normal organism. Nevertheless, we may perhaps be justified in warning the reader against undue apprehension at first consideration on this score. With an intake of even 500 gm. or more of carbohydrate per day, the wastage of an equal number of milligrams of sugar, if it actually is such, is not a serious indictment of the efficiency of the organism. Meanwhile we shall await with interest the expansion of these observations to a degree where the statistics on persons of unquestionable health and normality will give a more permanent basis for clinical and therapeutic deductions.

Current Comment

THE CHICAGO SESSION

As our forms close, Wednesday morning, there is every indication that the 1918 session of the American Medical Association will be a success in every way. Even the attendance is proving to be far greater than war conditions would warrant one in expecting. The fact that over 20,000 physicians are in active service and the recent increase in railroad rates naturally have interfered with the attendance. In spite of these things, however, the registration for the first two days was 3,552,[1] which was within 231 of being as large as the registration last year, in New York, for the first two days. The Opening Meeting indicated the spirit that is prevailing at this session—a spirit of patriotism, of loyalty, of self-sacrifice. Never before has there been such a large attendance at an Opening Session. There was added enthusiasm and patriotism on account of the presence of the band of the Fort Riley Medical Officers Training Camp, of the two hundred medical officers of the Army and Navy, from that and other camps, who marched on the stage in double file, and of the distinguished medical officers of the allied nations who occupied the foreground. The stirring addresses of the Opening Meeting will be found elsewhere in this issue. The medical military features of the meeting, many of them provided especially by the Surgeon-General's Office, include a late model motor ambulance with spare parts trailer, which drove overland to the meeting from the U. S. Army Motor Ambulance Supply Depot, Louisville, Ky.; the flight to the meeting by a physician aviator, Major H. M. Strong, Post Surgeon at Rantoul, Ill.; the exhibition of the Fort Riley Sanitary School, including over fifty-five models of all of the various types of sanitary devices in use at Army posts and camps; a continuous military motion picture show, with motion pictures issued under the authority of the Commission on Training Camp Activities and the Surgeon-General's Office; and a military medical headquarters in which advice is being given relative to enlistment in the service of the Army and Navy, and in which numerous recruits for the Medical Reserve Corps were enlisted. These and other features too numerous to mention are making the sixty-ninth annual session a historic medical military patriotic meeting.

NECESSITY FOR CARE IN ADMINISTERING ARSPHENAMIN

It is evident that more than the ordinary number of severe reactions from arsphenamin have occurred lately, or that more are coming to light. There are certainly indications that there is need for especial care in its administration at the present time. There is a tendency in some places to make the treatment with it very intensive, even giving daily doses for several successive days. About 50 per cent. of a dose of arsphenamin is excreted during the first three days after intravenous administration, and the remaining part is excreted with diminishing rapidity over a longer time. The daily intensive use of the drug therefore means that it accumulates rapidly in the system; in view of the fact that some of the most serious accidents develop only after several days, the question may justly be raised whether this intensive use is not exposing the patient to added risk, which should not now be taken. It is true that many serious reactions lately reported occurred immediately, indicating also that it would be wise to begin with a small dose — say 0.3 gram. Boiling arsphenamin is also an occasional practice. This should be discontinued. The brand "arsenobenzol" is of difficult solubility, but this brand can be safely dissolved in hot water. The more soluble brands do not stand heat well and should be dissolved in water at room temperature. In general, practitioners should be more than ordinarily cautious in the use of arsphenamin at the present time. We are working under great pressure in medicine as in other lines. This is not the time to be careless of risks in the intensive use of this drug or indifferent to the possibilities of its being made toxic by boiling or other incautious manipulations.

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[3] Taylor, A. E., and Hulton, F.: Jour. Biol. Chem., 1916, 25, 173.

[4] Myers, V. C.: Proc. Soc. Exper. Biol. and Med., 1915-1916, 13, 178.

[1] At 12 noon Wednesday the registration had reached 4,595.

MORPHIN AND REACTION TIME

The announcement of a new journal, *Psychobiology*,[1] states that it is established for "the publication of research bearing on the interconnection of mental and physiological functions. It will include in its volumes, therefore, not only investigations of what is sometimes called 'psychological physiology,' but also investigations in pharmacology, physiology, anatomy, neurology, and psychiatry in so far as the results of these investigations have explicit bearing on problems of mental life, or mental factors are included in the essential conditions of the investigation." The first number illustrates the relation of psychology to pharmacology in a research on the effect of some opium alkaloids on the psychologic reaction time.[2] The effects of alcohol and alcoholic beverages on psychic functions have been investigated frequently; some attention has likewise been paid to coffee and tea and the caffein that they contain. In connection with such commonly used drugs it is often asked whether they really stimulate in the true sense of the word, or, in refined analysis, are they merely found to depress or inhibit? In the case of morphin alone or in combination with other opium alkaloids, Macht and Isaacs[2] of John Hopkins University have found that the answer depends on the dose used. In man, after small doses of morphin, there is generally a primary stage of stimulation or quickened reaction time; this may or may not be followed by a secondary stage of depression, as indicated by narcosis and prolongation of the reaction time. After large doses of morphin, the primary stimulation stage is very short and may be overlooked, whereas the secondary or stage of depression is predominant. The small doses, which gave a distinct primary stimulation, were from 4 to 6 mg. of morphin. The ordinary therapeutic dose of from 8 to 15 mg. (1/8 to 1/4 grain) is reported to be usually too large to make the quickened reaction in normal persons very noticeable; and therefore it seems to have been overlooked. It is the opinion of Macht and Isaacs that the primary stage of quickening or stimulation probably corresponds to the stage of euphoria or well-being, so well known to the pharmacologist, which occurs after small doses of opiates. It is this sense of well-being, they add, which probably is responsible in a great measure for the greater accuracy in mathematical calculations which they tested, especially in subjects with a nervous temperament, since the narcotic action of the drugs is just sufficient to "take the edge out" of the subject's anxiety.

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[1] Psychobiology, a journal devoted to the field common to psychology and the biologic sciences, edited by Knight Dunlap, in association with J. J. Abel, W. B. Cannon, R. Dodge, S. I. Franz, H. S. Jennings and G. H. Parker, Baltimore, Williams and Wilkins Company.

[2] Macht, D. I., and Isaacs, S.: Action of Some Opium Alkaloids on the Psychological Reaction Time, Psychobiology, 1917, **1**, 19.

Medical Mobilization and the War

The Smith Bill Passes the House

The Smith bill for vocational rehabilitation which passed the Senate recently, as described in The Journal for May 11, passed the House of Representatives on Monday, June 10.

Honorary Degree Awarded Surgeon-General Gorgas

The honorary degree of doctor of laws was conferred on Surg.-Gen. William C. Gorgas by the New York University and the Bellevue Hospital Medical College, of which Surgeon-General Gorgas is a graduate, at a special meeting in New York on June 5. In an address to the audience he contrasted the methods of military surgery of fifty years ago with those of today; he also stated that the general practitioner, skilled in all fields of medicine—the one who can do anything necessary for the health of the soldier—is the one most urgently needed by the Army.

Personnel of the Medical Department

For the week ending June 7, 1918, the personnel of the Medical Department of the Army included:

Medical Corps: 868, including 1 major-general, 65 colonels, 110 lieutenant-colonels, 298 majors and 395 lieutenants.

Medical Reserve Corps: 19,358, including 1,380 majors, 5,119 captains and 12,859 lieutenants. On active duty: 17,474, including 1,297 majors, 4,799 captains and 11,378 lieutenants.

Medical Corps, National Guard: 1,297, including 19 lieutenant-colonels, 255 majors, 181 captains and 744 lieutenants.

Medical Corps, National Army: 157, including 8 brigadier-generals, 18 colonels, 123 lieutenant-colonels and 8 majors.

The discharges to date are:

Causes	Number M.R.C.	Number M.C.N.G.
Physical disability	671	52
Inaptitude	265	20
Other branches of service	363	72
Resignations	140	33
Domestic troubles	59	0
Needed by community	50	0
Deaths	81	5
Dismissals	10	3
Duty completed	1	0
No reasons given	14	0
	1,654	185

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending May 31, 1918

1. ANNUAL ADMISSION RATE PER 1,000 (disease only):

		Last Week
All Troops	974.5	1,069.1
Divisional Camps	757.8	764.5
Cantonments	1,098	1,200.9
Departmental and other Troops	979.4	1,109.1

2. NONEFFECTIVE RATE PER 1,000 ON DAY OF REPORT:		
All Troops	36.8	39.8
Divisional Camps	31.7	33.4
Cantonments	43.1	46.4
Departmental and other Troops	32.7	35.8
3. ANNUAL DEATH RATE PER 1,000 (disease only):		
All Troops	4.01	5.7
Divisional Camps	2.5	1.9
Cantonments	6.0	9.0
Departmental and other Troops	2.7	4.1

NEW CASES OF SPECIAL DISEASES REPORTED DURING THE WEEK ENDING MAY 31, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal		Measles	Meningitis	Scarlet Fever	Deaths	Annual Admission Rate per 1,000 (Disease Only)	Noneffective per 1,000
				Total	New Infections						
Beauregard	...	4	15	84	3	...	1	..	3	1,073.3	44.3
Bowie	1	..	2	62	39	...	..	..	2	734.8	25.8
Cody	1	..	..	6	...	1	..	..	0	266.6	16.0
Doniphan	4	..	3	21	...	...	..	1	1	1,472.4	53.8
Fremont	17	1	..	10	4	19	1	1	3	839.6	34.0
Hancock	1	..	..	43	...	1	..	..	0	851.4	38.2
Kearny	2	..	..	4	...	9	..	1	1	433.5	22.6
Logan	1	..	..	20	12	2	..	..	0	387.6	24.5
MacArthur	...	..	..	...	...	...	..	..	0	832.7	33.9
McClellan	1	..	3	59	27	11	..	..	1	786.8	25.2
Sevier	1	..	6	17	9	9	1	..	1	436.3	32.6
Shelby	3	3	4	18	...	3	..	1	2	772.6	32.3
Sheridan	...	..	5	39	...	18	..	5	1	913.3	37.1
Wadsworth	6	..	1	49	...	15	..	..	0	2,236.3	69.4
Wheeler	7	2	6	65	...	...	..	..	4	559.7	24.7
Custer	8	..	..	83	3	9	..	2	3	535.3	21.0
Devens	18	..	..	21	5	16	1	..	2	609.3	30.1
Dix	...	..	1	79	2	11	2	2	2	814.2	32.8
Dodge	15	..	..	82	...	23	2	1	7	1,189.7	67.4
Funston	4	..	1	43	10	10	3	1	7	919.0	56.2
Gordon	8	..	1	194	5	40	1	..	11	1,891.6	61.3
Grant	2	..	..	15	...	13	..	3	4	336.0	16.7
Jackson	11	1	1	276	...	45	2	1	6	1,763.1	57.4
J. E. Johnston	6	..	3	40	...	9	..	..	3	1,047.8	37.8
A. A. Humphreys	2	..	..	21	8	4	2	..	0	622.0	15.0
Lee	1	..	..	804	...	7	..	..	1	2,030.6	91.0
Lewis	5	..	..	271	4	12	1	17	1	1,063.3	32.1
Meade	4	..	..	21	16	6	..	..	3	862.0	27.7
Pike	11	1	13	59	7	7	2	..	7	1,377.0	54.3
Sherman	2	..	..	84	...	4	..	..	0	1,001.4	53.8
Taylor	...	..	.	76	7	32	2	..	3	979.7	47.7
Travis	15	5	11	56	1	34	..	1	4	1,499.0	30.5
Upton	...	..	..	261	12	1	..	..	3	836.5	34.8
Northeastern Dept.	...	..	..	43	32	...	..	..	1	858.6	26.4
Eastern Dept.	3	..	4	163	100	16	..	2	5	785.4	20.0
Southeastern Dept.	1	..	5	121	95	3	..	..	3	1,109.7	33.7
Central Dept.	7	..	..	114	69	15	..	8	1	1,384.0	44.8
Southern Dept.	7	2	8	237	31	11	..	2	7	1,250.6	38.9
Western Dept.	3	..	1	54	22	9	..	6	5	785.8	22.3
Aviation S. C.	7	16	2	127	17	17	..	6	10	1,009.7	27.8
Alcatraz, D. B.	...	..	..	...	...	...	..	..	0	626.6	15.0
Columbus Bks.	1	..	..	27	1	1	..	..	0	875.2	23.9
Edgewood Arsenal	1	..	..	...	...	...	..	..	0	513.1	8.0
El Paso	...	..	..	...	...	...	..	..	0	400.8	17.3
Hoboken	6	..	6	105	15	17	1	12	2	532.4	32.0
Holabird	...	..	..	...	...	1	..	..	0	218.6	1.2
Jefferson Barracks	3	..	..	154	1	7	..	..	1	1,543.9	88.3
Leavenworth, D. B.	1	..	..	2	...	...	..	..	0	809.7	34.2
Fort Logan	1	..	..	19	3	1	..	5	0	3,407.5	75.6
Fort McDowell	...	..	2	30	...	1	..	1	0	1,713.7	84.6
Newport News	7	..	5	323	16	22	1	1	5	1,169.6	47.6
Raritan	...	..	..	...	...	1	..	..	0	502.6	19.3
Fort Slocum	...	..	..	18	1	1	..	..	0	850.7	35.2
Springfield Arm.	...	..	..	...	...	...	..	..	0	1,100.5	10.6
Fort Thomas	...	..	..	12	...	5	..	..	1	1,663.8	55.8
Watervliet	...	..	..	...	...	...	..	..	0	319.0	36.8
West Point	...	..	..	1	...	...	..	..	0	384.7	6.0
Total	205	35	109	4,573	597	499	23	80	127	974.5	36.8

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending May 31, 1918	Departmental and Other Troops, Week Ending May 31, 1918	Divisional Camps, Week Ending May 31, 1918	Cantonments, Week Ending May 31, 1918	Expeditionary Forces, Week Ending May 23, 1918
Pneumonia	7.9	5.27	7.5	10.3	20 8
Dysentery	1.35	1.97	1.7	0.64	1.7
Malaria	4.2	3.6	7.5	2.85	0.77
Venereal	174.6	171.5	83.0	232.0	75.4
Paratyphoid	0.0	0.0	0.0	0.0	0.67
Typhoid	0.08	0.1	0.0	0.09	0.19
Measles	19.2	14.0	14.7	26.0	9.7
Meningitis	0.88	0.2	0.5	1.65	1.1
Scarlet fever	3.08	4.7	1.5	2.58	3.0

COMMISSIONS ACCEPTED

ARIZONA

O. S. PHILLIPS, Fort Defiance

ARKANSAS

J. H. M. HARDY, Malvern

CALIFORNIA

C. STEIN, Bellflower
C. A. SHEPPARD, Needles
W. A. BAYLEY, Los Angeles
D. D. LUCEY, Los Angeles
J. M. SEVERSON, Los Angeles
E. H. JORDAN, Tecate

COLORADO

W. P. HARLOW, Boulder

CONNECTICUT

H. G. JARVIS, Hartford
L. C. WHITING, New Haven
E. H. J. HENNESSY, Stratford

DISTRICT OF COLUMBIA

R. M. CHAPMAN, Washington

GEORGIA

S. A. CLARK, Eatonton
O. S. COFER, Smyrna

ILLINOIS

P. E. GREENLEAF, Bloomington
J. E. [illegible]
H. N [illegible] Chicago
F. L. [illegible]
T. H. [illegible], Chicago
H. W. TRAUB, Chicago
S. F. WHISTLER, Loami

INDIANA

G. M. COOK, Mooresville

IOWA

J. A. HULL, Ottumwa
W. M. NESBIT, Waterloo

KANSAS

C. A. McGUIRE, Topeka

KENTUCKY

D. B. ROACH, Cadiz
W. M. EWING, Cave City
C. T. WILFONG, Louisville
G. L. THOMPSON, Lovelaceville

LOUISIANA

T. A. COMBIE, Hohnville
B. R. HENGER, New Orleans
H. P. JONES, New Orleans
C. G. SALLAS, Thibodaux

MAINE

J. R. HAMEL, Portland

MARYLAND

J. E. BURNS, Baltimore
R. V. HOFFMAN, Baltimore
L. A. M. KRAUSE, Baltimore
L. L. SMITH, Baltimore
G. B. [illegible]
F. H. [illegible]
G. W. [illegible]

MASSACHUSETTS

A. KLEIN, Boston
H. A. JOHNSON, Lynn
I. F. ARMSTRONG, Marlborough
W. A. MACINTYRE, Worcester

MICHIGAN

J. H. ROCK, Detroit
B. H. VAN LEUVEN, Petoskey

MINNESOTA

W. H. EATON, Duluth

MISSISSIPPI

T. Y. FLEMING, Minter City

MISSOURI

U. P. G. HAW, Benton
A. M. UNDERWOOD, Holstein
P. O. HURFORD, St. Louis
C. A. LEAVY, St. Louis

MONTANA

A. N. J. DOLAN, Great Falls
J. L. TREACY, Helena

NEW HAMPSHIRE

C. F. NUTTER, Nashua

NEW JERSEY

H. M. REILLY, Summit
C. B. BORN, West Hoboken

NEW MEXICO

F. A. DILLON, Clovis

NEW YORK

J. L. BENDELL, Albany
H. S. BONTECON, Beacon
W. B. EBERLING, Brooklyn
R. A. EDSON, Buffalo
F. H. CARBER, Forest Hills
C. H. BRUSH, Kings Park
W. H. SANFORD, Kings Park
T. P. BERENS, New York City
A. A. BERSIN, New York City
J. GOLDSTONE, New York City
T. A. KENYON, New York City
A. G. LANGMANN, New York City
P. J. MANHEIM, New York City
J. S. RICHARDS, Randall's Island
W. F. PLUMLEY, Rochester
A. C. SILVERMAN, Syracuse
M. J. J. COLUCCI, Yonkers

NORTH CAROLINA

J. B. BULLITT, Chapel Hill

OHIO

E. P. KENNEDY, Cleveland
F. FLETCHER, Columbus
R. B. STEVENSON, Columbus

OREGON

F. P. FIREY, Portland

PENNSYLVANIA

E. M. BLEW, Allentown
S. H. HOLLAND, Industry
H. M. OSTRUM, Philadelphia
K. EMMERLING, Pittsburgh
W. R. CAMPBELL, Smithfield
R. R. WHITTAKER, Williamsburg

SOUTH CAROLINA

C. B. MILLS, Cross Hill

SOUTH DAKOTA

A. F. GROVE, Dell Rapids

TENNESSEE

R. E. GARRETT, Dixon Springs
J. D. CARPENTER, Lavinia
M. L. BLACK, Wind Rock

TEXAS

L. E. HASTINGS, Dallas
W. E. VANDEVERE, El Paso
M. E. HASTINGS, Galveston
B. A. SWINNEY, JR., Newton
F. A. ALLIN, San Antonio
H. P. CALMES, San Antonio
N. M. KENNEY, San Antonio
R. A. ROBERTS, San Antonio
J. R. DESTEIGNER, San Marcas
E. B. BUCHANAN, Texarkana
F. I. FIELD, Waco

UTAH

C. E. WARDLEIGH, Ogden

VERMONT

D. R. BROWN, Lyndonville
C. H. SMITH, Rupert
G. G. HALL, South Woodbury

VIRGINIA

J. M. HOLLOWAY, Port Royal

WASHINGTON

M. J. LACEY, Auburn
H. S. JUDD, Tacoma

WEST VIRGINIA

S. L. BOSSARD, Belleville
O. F. COVERT, Moundsville
C. DENHAM, Weston

WISCONSIN

S. E. GAVIN, Fond du Lac
S. R. MITCHELL, Milwaukee

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp A. A. Humphreys, Accotink, Va., to examine the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. HENRY C. HARRIS, Birmingham.

To Camp Sevier, Greenville, S. C., base hospital, Lieut. ELDRIDGE T. BROWN, Cleveland.

To Fort Barrancas, Fla., for duty, Capt. FRANK P. PETTEY, Albany.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, Lieut. ROBERT R. DIXON, Tuscaloosa.

Arizona

To Fort Riley for duty, from Camp Cody, Lieut. ISAAC L. GARRISON, Phoenix.

Arkansas

To Camp Pike, Little Rock, Ark., for duty, Lieut. JOHN H. M. HARDY, Malvern.

To Portland, Ore., Yeon Building, for duty, Lieut. SAMUEL B. DEGNAN, Little Rock.

California

To Fort Oglethorpe for instruction, Lieut. ARTHUR J. HOLETON, San Diego.

To Fort Sam Houston, Texas, base hospital, Capt. HARRY H. KOONS, Los Angeles.

To Portland, Ore., Yeon Building, for duty, Capt. JOHN G. GRAFFIN, Fallbrook; Lieuts. GILES S. PORTER, Los Angeles; FREDERICK K. LORD, San Francisco.

To report by wire to the commanding general, Western Department, for assignment to duty, Capt. CHARLES STEIN, Bellflower; Lieuts. DANIEL D. LUCEY, THOMAS A. McINTYRE, Los Angeles.

Colorado

To New Haven, Conn., for duty Capt. WILLIAM P. HARLOW, Boulder.

To report by wire to the commanding general, Central Department, for assignment to duty, Capt. HARVEY R. HALL, La Junta.

The following order has been revoked: *To Fort Logan, Colo.*, for duty, Capt. CHARLES H. FISCHER, Walden.

Connecticut

To Camp Jackson, Columbia, S. C., for duty, Lieuts. GEORGE J. SCHUELE, Bridgeport; E. H. J. HENNESSEY, Stratford.

To Fort Oglethorpe for instruction, Lieut. ELROY W. SMITH, Brookfield.

To New Haven, Conn., for duty, Lieut. LEONARD C. WHITING, New Haven.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Oglethorpe, Lieut. ARTHUR S. GRANT, Hartford.

To New York City, Neurological Institute, for instruction, Lieut. HENRY G. JARVIS, Hartford.

District of Columbia

To Walter Reed General Hospital, Takoma Park, D. C., for temporary duty, Major JOSEPH H. BRYAN, Washington.

To Washington, D. C., St. Elizabeth's Hospital, for intensive training, Lieut. DILLON G. O'NEILL, Washington.

Georgia

To Douglas, Ariz., for duty, from Camp Dix, Capt. WILLIAM G. HUNTER, Augusta.

To Fort McPherson, Ga., for duty, Lieut. HENRY W. SHAW, Augusta.

Idaho

To Hoboken, N. J., for duty, from Camp Dix, Lieut. ELTON B. ROGERS, Winchester.

To report by wire to the commanding general, Western Department, for assignment to duty, Lieuts. CHARLES J. MARTIN, Dwiggs; FRANCIS S. MILLER, Inkom.

Illinois

To Boston, Mass., Harvard Graduate School of Medicine, for instruction from Army Medical School, Lieut. BEVERIDGE H. MOORE, Chicago.

To Camp Colt, Gettysburg, Pa., for duty, Lieuts. MORRIS B. KARATZ, BENJAMIN M. WELIN, Chicago; FRANK L. TOWNSLEY, East Chicago; SENN F. WHISTLER, Laomi.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. GEORGE E. SANDERS, Chicago.

To Camp Grant, Rockford, Ill., base hospital, from Fort Oglethorpe, Capt. ROBERT S. GREGG, Chicago.

To Camp Pike, Little Rock Ark., for duty, Lieuts. MYRON I. INGRAM, WILLIAM R. READ, Chicago.

To Camp Zachary Taylor, Louisville, Ky., base hospital, Lieuts. JAMES E. ARNOLD, HUGO W. TRAUB, Chicago.

To Camp Zachary Taylor, Louisville, Ky., for duty, from Camp Sherman, Lieut. WALTER G. MOHR, Chicago.

To Fort Oglethorpe for instruction, Lieut. ROY GRIFFY, Oblong.

To Jefferson Barracks, Mo., for duty, Lieut. MAX L. FOLK, Elgin.

To New Haven, Conn., for duty, Lieut. ROBERT M. CARPENTER, St. Charles.

To report to the commanding general, Central Department, for duty, Major JOHN A. ROBISON, Chicago.

The following order has been revoked: *To Camp Bowie*, Fort Worth, Texas, for duty from Fort Riley, Lieut. RUSSELL A. HENNESSEY, Chicago.

Indiana

To Camp Sherman, Chillicothe, Ohio, for duty, Lieut. VENICE D. KEISER, Indianapolis.

To Camp Travis, Fort Sam Houston, Texas, for duty, from Fort Clark, Texas, Lieut. EDGAR R. HIATT, Portland.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Oglethorpe, Lieut. CHESTER A. MARSH, Newcastle.

Iowa

To Camp Forrest, Chickamauga Park, Ga., for duty, from Camp Sherman, Capt. HERBERT W. PLUMMER, Lime Springs.

To Camp Hancock, Augusta, Ga., base hospital, Capt. CHARLES B. McGLUMPHY, Iowa City.

To Camp Pike, Little Rock, Ark., for duty, Capt. JAMES A. HULL, Ottumwa; Lieut. BENJAMIN L. MEIGS, Fort Dodge.

To Portland, Ore., Yeon Building, for duty, Lieut. MARTIN L. HOOPER, Indianola; FRANK W. MILLS, Ottumwa; FREDERICK H. GRABER, Stockport; EVERETT E. RICHARDSON, Webster.

Hawaii

To Hawaiian Department for duty, Capts. CHARLES ADAMS, Honolulu; FLETCHER G. SANBORN, Molokai; Lieut. FRANK R. MISSNER, Maui.

Kansas

To Camp Pike, Little Rock, Ark., for duty, Lieuts. SEBREE S. McGINNIS, Dighton; JAMES B. DONNELL, Kingsley.

Kentucky

To Camp A. A. Humphreys, Accotink, Va., to examine the troops for cardiovascular diseases, from Camp Meade, Capt. THOMAS F. MILLER, Glasgow.

To Camp Colt, Gettysburg, Pa., for duty, Lieuts. HARTMAN A. LICHTWARDT, Berea; GEORGE L. THOMPSON, Lovelasville.

To report to the commanding general, Southern Department, for assignment to duty, from Fort Sam Houston, Capt. JETHRA HANCOCK, Louisville.

Louisiana

To Camp Jackson, Columbia, S. C., Base hospital, Lieuts. PANAGIOTIS M. PAPOULACOS, Boston; FREDERICK A. MEAD, Willimansett.

To Camp Jackson, Columbia, S. C., for duty, Lieuts. JOSEPH C. MENENDEZ; JONAS W. ROSENTHAL, New Orleans.

To Camp Sevier, Greenville, S. C., base hospital, Lieut. ALBERT A. SHAPIRA, Boston.

To Fort Bliss, Texas, base hospital, Major HAMILTON P. JONES, New Orleans.

To Fort McPherson, Ga., for temporary duty, Capt. CARLOS G. SALLOS, Thibodaux.

To Fort Riley for duty, from Camp Beauregard, Major JAMES B. GUTHIE, New Orleans; from Camp Cody, Lieut. JAMES E. DYSON, Manilla.

To Hoboken, N. J., for duty, Lieut. GEORGE H. SCHWARTZ, East Boston.

To New Haven, Conn., for duty, Lieut. BEN R. HENINGER, New Orleans.

Maryland

To Camp Jackson, Columbia, S. C., *Camp Hancock*, Augusta, *Camp Wheeler*, Macon, *Camp Gordon*, Atlanta, and *Camp Forrest*, Chickamauga Park, Ga., *Camp McClellan*, Anniston, and *Camp Sheridan*, Montgomery, Ala., *Camp Shelby*, Hattiesburg, Miss., and *Camp Jackson*, Columbia, S. C., for orthopedic instruction, Capt. HENRY P. MAUCK, Baltimore.

To Hoboken, N. J., base hospital, from Camp Meade, Lieut. AUSTIN H. WOOD, Baltimore.

Massachusetts

To Camp Hancock, Augusta, Ga., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. HARRY A. WALKER, Somerville.

To Hoboken, N. J., for duty, from Camp Meade, Lieut. EVERETT A. MERRILL, Lynn.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Oglethorpe, Lieut. WHITMAN K. COFFIN, West Medford.

Michigan

To Camp Custer, Battle Creek, Mich., base hospital, Lieut. GEORGE W. WILSON, Detroit.

To Camp Jackson, Columbia, S. C., for duty, Lieuts. JOHN H. ROCK, Detroit; BUELL H. VAN LEUVEN, Petoskey.

To Camp Sherman, Chillicothe, Ohio, for duty, Lieut. CHARLES R. DENGLER, Jackson.

To report by wire to the commanding general, Central Department, for assignment to duty, Lieut. ARCHIBALD McKILLOP, Wolverine.

The following order has been revoked: *To Camp Logan*, Houston, Texas, for duty, from Fort Riley, Lieut. OTIS B. MALLOW, Detroit.

Minnesota

To Camp Colt, Gettysburg, Pa., for duty, Lieut. RICHARD N. JONES, Minneapolis.

To Camp Meade, Annapolis Junction, Md., base hospital, from Camp Colt, Capt. JOHN W. LEE, Minneapolis.

To Fort Oglethorpe for instruction, Lieut. HARRY OERTING, Minneapolis.

To Jefferson Barracks, Mo., for duty, from Fort Riley Lieut. LINWOOD M. KEENE, Alexander.

To New Haven, Conn., for duty, Capt. GEORGE W. BEACH, Walker.

To Portland, Ore., Yeon Building, for duty, Lieut. JOSEPH W. LECLERC, LeSueur.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Upton*, L. I., N. Y., base hospital, Lieut. LESLIE H. REDELINGS, Rochester.

Mississippi

To Camp Jackson, Columbia, S. C., for duty, Lieut. TUCKER T. FLEMING, Minter City.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to his proper station*, from New York City, Major JOHN W. BARKSDALE, Winona.

Missouri

To Camp Bowie, Fort Worth, Texas, as assistant to camp surgeon, from Camp Hancock, Lieut. ROY F. MILLS, Odessa.

To Camp Dodge, Des Moines, Ia., base hospital, Lieut. GEORGE H. MORELAND, Butler.

To Camp Jackson, Columbia, S. C., for duty, Capt. URIEL P. HAW, Benton.

To Fort Riley, base hospital, Lieut. GEORGE W. SMITH, Kansas City.

To Hoboken, N. J., for duty, from Camp Sheridan, Capt. ERNEST G. MARK, Kansas City.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School* for duty, Capt. PHELPS G. HICKFORD, St. Louis.

To Washington, D. C., for duty in the Surgeon-General's Office, from Jefferson Barracks, Major HENRY G. WYER, Kirkwood.

Montana

To Fort Snelling, Minn., for duty, from Camp Grant, Lieut. HERBERT HAYWARD, Darby.
To Hoboken, N. J., for duty, Lieut. Thomas B. Scott, Butte.
To report by wire to the commanding general, Western Department, for assignment to duty, Lieut. ANDREW K. RESNER, Ronan.

Nebraska

To Camp Meade, Annapolis Junction, Md., base hospital, Capt. HENRY B. LOMERE, Omaha.

Nevada

To Camp Bowie, Fort Worth, Texas, base hospital, from Fort Riley, Lieut. JOHN G. KITCHEN, Mina.
To Portland, Ore., Yeon Building, for duty, Lieut. GEORGE F. POPE Winnemucca.

New Jersey

To Army Medical School for duty, from Rockefeller Institute, Lieut. WALTER W. SCHMIDT, Cliffside.
To Camp Colt, Gettysburg, Pa., for duty, Lieut. CHARLES E. BORN, West Hoboken.
To Fort Des Moines, Ia., base hospital, from Fort Oglethorpe, Lieut. ELMER W. SMITH, Passaic.
To Fort McPherson, Ga., for temporary duty, Lieut. JOHN F. McGOVERN, New Brunswick.

New Mexico

To Camp Cody, Deming, N. M., with the board examining the troops for tuberculosis, Capt. FRED A. DILLON, Clovis.

New York

To Allentown, Pa., for temporary duty, and on completion to his *proper station*, Major PERCY R. TURNURE, New York City.
To Camp A. A. Humphreys, Accotink, Va., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. JOHN L. BYRNES, Hudson Falls.
To Camp Dix, Wrightstown, N. J., with the board examining the command for nervous and mental diseases, Lieut. CHARLES H. BRUSH, L. I., N. Y.
To Camp Jackson, Columbia, S. C., for duty, Lieut. WILLIAM G. FLICKINGER, [illegible]
[illegible] *hnston*, Jacksonville, Fla., for duty, Capt. [illegible], Kings Park, L. I.; Lieuts. CHARLES L. WOITZ, Mt. Vernon; ARTHUR H. McFARLAND, New York City.
To Camp Sevier, Greenville, S. C., base hospital, Lieut. DAVID TROPAUER, New York City.
To Fort Oglethorpe for instruction, Lieuts. ABRAHAM RAVICH; HENRY H. BEINFIELD, HENRY L. PILZER, Brooklyn; DOUGLAS F. ROBBINS, Poughkeepsie.
To Fort Oglethorpe for temporary duty, from Fort Riley, Lieut. JOHN F. CURTIN, New York City.
To Hoboken, N. J., base hospital, Lieut. MILTON J. WILSON, Mount Vernon. For duty, Lieuts. GEORGE P. DE TUNCQ, Blackwells Island; JOHN H. ROBERTSON, New York City.
To Hoboken, N. J., for duty, from Camp Dix, Lieut. ADOLPH A. WEISS, New York City.
To New Haven, Conn., for duty, Lieut. MORRIS A. SAGOWITZ, New York City.
To Plattsburg Barracks, N. Y., for inspection and on completion *to his proper station*, Major RICHARD H. HUTCHINGS, Ogdensburg.
To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School*, for duty, Lieut. ROBERT P. DOBBIE, Buffalo. For instruction *in the* treatment of infected wounds, and on completion *to Camp Devens*, Ayer, Mass., base hospital, Lieut. WILBUR C. TRAVIS, Northport.
To Walter Reed General Hospital, Takoma Park, D. C., for temporary duty, Lieut. CLARENCE F. FOWLER, New York City.
To Williamsbridge, N. Y., for temporary duty, from New York City, Lieut. FREDERICK C. KELLER, New York City.
The following order has been revoked: *To Camp Jackson*, Columbia, S. C., for duty, Lieut. PAUL T. HARPER, Albany.

North Carolina

To Fort Oglethorpe for instruction, Lieut. AUSTIN P. KLUTZ, Maiden.
To New York City, Neurological Institute, for instruction, from Camp Gordon, Lieut. LOUIS N. WEST, Raleigh.

Ohio

To Fort Oglethorpe for instruction, from Camp Kelly, Capt. JOHN C. MILLER, Payne.

Oklahoma

To Camp Dodge, Des Moines, Ia., base hospital, Lieut. WILLIAM B. NEWLON, Tulsa.
To Camp MacArthur, Waco, Texas, for duty, Capt. GREGORY A. WALL, Tulsa.
To San Francisco, Calif., Letterman General Hospital, for temporary duty, Major ROBERT L. MULL, Oklahoma City.

Oregon

To report by wire to the commanding general, Western Department, for assignment to duty, Capt. ERNEST N. CROCKETT, Portland; Lieut. WILLIAM P. CHISHOLM, Gold Hill.

Pennsylvania

To Army Medical School for duty, from Rockefeller Institute, Capt. WILLIAM H. BAILEY, Philadelphia.
To Camp Colt, Gettysburg, Pa., for duty, Lieut. RALPH R. WHITAKER, Williamsburg.
To Camp Jackson, Columbia, S. C., for duty, Lieut. STANLEY H. HOLLAND, Industry.
To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Lieut. FREDERICK W. KNOLL, Reading.
To Fort Riley for instruction, Lieut. CLARENCE J. McCULLOUGH, Washington.
To Lakewood, N. J., for duty, from Camp Cody, Major WILLIAM H. THOMAS, Philadelphia.
To Mineola, L. I., N. Y., for temporary duty, and on completion *to his proper station*, Major ISAAC H. JONES, Philadelphia.
To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, Lieut. WILLIAM B. SWARTLEY, Philadelphia.
To New Haven, Conn., for duty, Capt. WILLIAM G. TURNBULL, Cresson; Lieut. JAMES W. WOOD, Chester.
To New York City, for duty, from Camp Zachary Taylor, Lieut. ARCHIE W. DUNN, Philadelphia. Cornell Medical College for instruction in military roentgenology, from Camp Meade, Lieut. CHARLES A. FITZGERALD, Clarion.
To Portland, Ore., Yeon Building, for duty, Lieut. JONATHAN M. MANSFIELD, Clinton.
To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School* for duty, Lieut. WILLIAM H. JONES, Shaft.
To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Camp Devens, Ayer, Mass., base hospital, from Camp Forrest, Capt. FREDERICK B. ALLEN, North Wales; for instruction in the treatment of infected wounds, from New York City, Lieut. DAVID B. HAWKINS, Philadelphia.
To report by wire to the commanding general, Eastern Department, for assignment to duty, Capt. WILLIAM S. STEWART, Sagamore.
The following order has been revoked: *To Camp Crane*, Allentown, Pa., base hospital, Lieut. JOHN R. DAVIES, Jr., Philadelphia.

Philippine Islands

To Hoboken, N. J., for duty, from Baltimore, Capt. HENRY W. KENNARD, Manila.
To Philippine Department for duty, Capt. JAMES L. BOOTH, Lieut. JUAN L. PAYSWALL, Manila.

Porto Rico

To Camp Las Casas, San Juan, P. R., for duty, Lieut. RAMON L. RODRIGUEZ, Bayamon.

South Carolina

To report by wire to the commanding general, Southeastern Department, for assignment to duty, Lieut. CHARLES A. McLURKIN, Chester.

Tennessee

To Camp Jackson, Columbia, S. C., for duty, Lieut. MARTIN L. BLACK, Windrock.
To Camp Pike, Little Rock, Ark., for duty, Lieut. RHEA F. GARRETT, Dixon Springs.
To Clemson, S. C., Agricultural College, to make physical examinations and give medical attention to the drafted *men enrolled* at this institution, from Fort Oglethorpe, Lieut. JAMES M. SMYTH, Camden.
To Fort Barrancas, Fla., for duty, Capt. JAMES H. McCALL, Huntingdon.
To Fort Oglethorpe for duty, from Camp Greene, Capt. BERNARD C. McMAHON, Memphis.

Texas

To Camp MacArthur, Waco, Texas, for duty, Lieuts. WILLIAM P. MEREDITH, JAMES McC. MITCHNOR, Houston; BLUFORD A. SWINNEY, Newton.
To Camp Pike, Little Rock, Ark., for duty, Lieuts. ROBERT A. ROBERTS, San Antonio; JOHN R. DESTEIGUER, San Marcos.
To Camp Travis, Fort Sam Houston, Texas, for duty, Lieut. MARION L. COMPTON, Galveston.
To Camp Wadsworth, Spartanburg, S. C., for duty, from Fort Apache, Capt. ROBERT H. McLEOD, Palestina.
To Fort Logan, Colo., for duty, Lieut. DEWITT G. BURKES, San Antonio.
To report by wire to the commanding general, Southern Department for assignment to duty, from Fort Worth, Lieut. TRUMAN C. TERRELL, Fort Worth.

Utah

To Fort Douglas, Utah, base hospital, from Camp Grant, Lieut. CLARENCE A. NYVALL, Salt Lake City.
To report by wire to the commanding general, Western Department, for assignment to duty, Lieut. CLAUDE E. WARDLEIGH, Ogden.

Vermont

To Camp Jackson, Columbia, S. C., for duty, Lieut. CLIFTON H. SMITH, West Rupert.

Virginia

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Lieut. JOSEPH H. HOLLOWAY, Fort Royal.
To Newport News, Va., for duty, from Army Medical School, Lieut. ALBERT P. TRAYNHAM, Richmond.

Washington

To Fort Riley for instruction, Capt. WILLARD G. PALMER, Seattle.
To Portland, Ore., Yeon Building, for duty, Capt. HERMAN S. JUDD, Tacoma; Lieut. CHARLES A. HAUBER, Chewelah.
To San Francisco, Calif., for instruction, and on completion *to Camp Kearny*, Linda Vista, Calif., base hospital, Lieut. BURTON E. FLEMING, McCleary.
To report by wire to the commanding general, Western Department, for assignment to duty, Lieut. MARTIN J. LACEY, Auburn.

West Virginia

To Camp Lee, Petersburg, Va., for duty, Lieut. JOHN C. LAWSON, Logan.
To Fort Oglethorpe for instruction, Lieut. LESLIE E. SAUGHERTY, Davis.

Wisconsin

To Camp Colt, Gettysburg, Pa., for duty, Capt. STEPHEN E. GAVIN, Fond du Lac.
To Camp Grant, Rockford, Ill., base hospital, from Fort Riley, Capt. ALBERT A. AXLEY, Butternut.
To Portland, Ore., Yeon Building, for duty, Capt. ALBERT A. PARKER, Clinton; Lieuts. JOHN C. SCOTT, Marinetta; WORTHINGTON L. RANTZ, Rosholt.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest; such as relate to society activities, new hospitals, education, public health, etc.)

GEORGIA

State Association Meeting.—The sixty-ninth annual meeting of the Medical Association of Georgia was held in Savannah, April 17 to 19, and the following officers were elected: president, Dr. Jarrett W. Palmer, Ailey; vice presidents, Drs. George R. White, Savannah, and Lee B. Clarke, Atlanta, and delegates to the American Medical Association, Drs. Henry H. Martin, Savannah, and Stewart R. Roberts, Atlanta. Atlanta was selected as the next place of meeting.

The Venereal Campaign.—At a recent conference in Atlanta between Prof. C. Wardell Stiles, U. S. P. H. S., and a representative of the state board of health, it was planned to establish a venereal clinic in each of the twelve congressional districts of the state. The regulations provide for a report of every case of venereal disease to be made by number; for the dissemination of information regarding venereal disease; for the examination and investigation of all cases; for the protection of others from infection; for the quarantine of affected persons, and for the prohibition of treatment by druggists. The regulations further declare that the spread of the disease is unlawful and that prostitution will be repressed, and that no physicians shall give a certificate of freedom from venereal disease, and that all records must be kept secret.

Personal.—Dr. R. Holmes Mason has been elected president and Dr. F. F. Jones, secretary, of the Rotary Club of Macon.——Dr. Thomas R. Wright, Augusta, has been reappointed a member of the board of trustees of the Georgia State Sanatorium, Milledgeville.——Dr. D. K. Dowd has been appointed city physician of Atlanta, succeeding Dr. James G. Hall, who is in the military service.——Dr. Charles H. Richardson, Jr., Macon, has been appointed a member of the state board of health, succeeding Dr. Howard J. Williams, deceased.——Dr. James E. Paullin, professor of practice of medicine in Emory University, Atlanta, has been appointed chief of medicine in the Emory Base Hospital, succeeding Major Stewart R. Roberts, who has been appointed commander of the base hospital at Camp Jackson, Greenville, S. C.

IDAHO

Reciprocal Relations Extended.—A letter from Dr. Ray H. Fisher, secretary of the Idaho State Board of Medical Examiners, states that at a meeting held in April, 1918, it was voted to extend the registration of physicians by reciprocity to those who have been licensed by examination in Arizona, California, Colorado, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming. Applicants will be eligible for registration, provided the intellectual requirements of these states meet the Idaho board's approval, and provided the applicant's moral and ethical record is above reproach. The reciprocal license fee is $50.

ILLINOIS

Higher Requirements in Illinois.—A letter from the department of registration and education states that after Oct. 15, 1918, no medical college will be recognized as in good standing in Illinois unless it requires for admission two years of work in an approved college of liberal arts or a fully equivalent education.

Diphtheria at Camp.—June 9, four cases of diphtheria were found among the troops of the third company of the first provisional regiment at the college students' training camp at Fort Sheridan. The company barracks were placed under quarantine. Most of the men of this company are from Purdue University and the University of Chicago.

Northwestern Alumni Elect Officers.—At the annual meeting of the Northwestern Medical School Alumni Association held in Chicago, June 10, Major Samuel C. Stanton ('92), M. R. C., U. S. Army, Chicago, was elected president; Dr. Luther J. Osgood ('03), Chicago, secretary-treasurer, and Dr. Horace M. Starkey ('78), Rockford, necrologist. At the smoker that followed the meeting, Col. William N. Bispham, M. C., U. S. Army; Majors Franklin H. Martin and Edmond J. Doering, Lieut.-Com. David S. Hillis, President Thomas F. Holgate of Northwestern University, and Dr. Luther J. Osgood, newly elected secretary of the faculty, were the speakers.

Course for Community Nurses.—According to the Illinois *Health News*, plans have been practically completed to establish in Springfield a two months' emergency graduate course for community nurse. This will be conducted by the state department of health, the state department of public welfare, and the Illinois Tuberculosis Association, with the cooperation of the Chicago School of Civics and Philanthropy, the Elizabeth McCormick-Fund, the Chicago Tuberculosis Institute, and other state and city welfare organizations. No fees will be charged. Graduate nurses registered in Illinois, or in their own states, will be eligible to the course. Graduates must agree to engage immediately in public service nursing in Illinois.

Chicago

Venereal Disease Hospital Opened.—The old contagious disease hospital, at West Thirty-Fourth Street and Lawndale Avenue, was opened by the city health department, June 3, for the treatment of women suffering from venereal disease, under the new regulations for the eradication of venereal disease.

Investigation of Irregulars.—The state department of medical registration has taken up the investigation of irregular practitioners in Chicago, and already about fifteen have been required to appear before the board of registration to confirm the correctness of their methods, and their right to practice medicine in the state.

KENTUCKY

Hospital Unit Called.—After a long period of training Dr. Barrow, Base Hospital Unit No. 40, was called, May 25, for active duty in France. The unit was recruited from the central Kentucky towns.

Officers Elected.—The Southwestern Kentucky Medical Association at its meeting at Paducah, May 14, elected the following officers: president, Dr. Benjamin B. Keys, Murray; vice presidents, Drs. Finis M. Travis, Benton, and Stanley Mullins, Wingo; secretary, Dr. Edwin A. Stevens, Mayfield (reelected); treasurer, Dr. Henry G. Reynolds, Paducah. The association will meet again in October at Murray.

Personal.—Dr. Jesse I. Whittenberg, health officer of Jefferson County, has resigned and Dr. Clarence H. Harris has been appointed to succeed him.——Dr. Argus D. Willmoth, Louisville, and Dr. Elijah H. Maggard, Wayland, have been appointed members of the state tuberculosis commission by the governor.——Dr. Arthur M. Barnett, president of the Jefferson County Board of Health, has been appointed jail physician to succeed Dr. Llewellyn P. Spears.——Dr. Vernon Robins, previously bacteriologist of the health department but recently state director of sanitation in Alabama, has been reappointed to the position of city bacteriologist under Health Officer Thomas H. Baker.——Dr. J. E. Stuckey has been urged to accept an appointment as head of a hospital in Panama, Canal Zone.——Dr. William S. Petrie, Fairview, who was recently operated on for a gastric ulcer, is now improving.

MARYLAND

One Hundred and Forty-Three Nurses Qualify.—One hundred and forty-three nurses, representing twenty-one training schools in Maryland, passed the examinations for state registration, held under the direction of the Maryland State Board of Examiners of Nurses at the Medical and Chirurgical Faculty building, Baltimore, May 9 and 10. While the majority of these nurses are still in training, they were admitted to the examinations at an earlier date than usual because of the demand for Red Cross nurses. Since obtaining certificates from the state board, they are eligible for Red Cross work immediately on completion of the courses at their respective training institutions.

Personal.—Sir James Mackenzie of Edinburgh, Scotland, and physician to the London Hospital, and an authority on diseases of the heart; Sir William Arbuthnot Lane, an authority on treatment of fracture and cleft palate, and consulting surgeon of Guy's Hospital, London, and Col. Herbert A. Bruce, Toronto, consulting surgeon to the British armies in France, were in Baltimore during the past week to visit the Johns Hopkins Hospital and other medical institutions.——Dr. William M. Dabney, captain in the American Red Cross organization, has returned to Baltimore from France, where he has been in charge of a large experimental hospital of the Red Cross.——Capt. Alexander D. McConachie, Baltimore, who is attached to the Medical Reserve Corps, U. S. Army, has arrived in France.——Dr. J. Percy Wade, superintendent of the Spring Grove State Hospital, Catonsville; Dr. Charles G. Hill., Mount Hope Retreat, and Dr. Edward N. Brush, superintendent of the Sheppard and Enoch Pratt Hospital, Towson, attended the annual meeting of the American Medico-Psychological Association in Chicago, last week.——Dr. Arthur P. Herring, secretary of the State Lunacy Commission of Maryland, was elected secretary of the American Medico-Psychological Association at its recent meeting in Chicago.——Mrs. Agnes C. Hartridge, a Johns Hopkins graduate of 1900 and former superintendent of nurses at the University Hospital, Augusta, Ga., has been placed in charge of the admitting office at the Johns Hopkins Hospital. Mrs. Hartridge takes the place of Dr. William C. Leavenworth, who has taken charge of the dispensary at the Hopkins. The latter succeeds Dr. L. Palmer Holmes, who has entered the Medical Reserve Corps, U. S. Army.——Dr. Cornelius DeWeese, one of the directors of the Laurel Sanitarium, at Laurel, was acquitted by the Circuit Court of Montgomery County of criminal blame in connection with the death of Ambler McManus, who died as a result of injuries sustained when struck by an automobile driven by Dr. DeWeese.

MASSACHUSETTS

Officers Elected.—At the thirty-fifth annual meeting of the American Climatological and Clinical Association, held at Boston, June 6, the following officers were elected: president, Dr. Guy Hinsdale, Hot Springs, Va.; vice presidents, Drs. Joseph H. Pratt, Boston, and Hugh M. Kinghorn, Saranac Lake, N. Y.; secretary-treasurer, Dr. Arthur K. Stone, Boston, and recording secretary, Dr. William D. Robinson, Philadelphia.

Harvard Medical Alumni Association.—The annual meeting of the Harvard Medical Alumni Association will be held this year at the time of the meeting of the Massachusetts Medical Society, Wednesday, June 19, at 2 p. m., in the Boston Medical Library. Reports will be received and officers elected. Graduates of the Harvard Medical School are invited to be present at this meeting and also at the alumni spread at Cambridge on Commencement Day, June 20, at 12 o'clock.

NEW YORK

New York City

Surgeon-General Gorgas Addresses Medical Faculty.—On the afternoon of June 5, Surgeon-General Gorgas delivered an address before the faculty of New York University and Bellevue Hospital Medical College on "The Activities of the Medical Department of the United States Army," at the Carnegie Laboratory of the medical college.

Personal.—Dr. Charles Gilmore Kerley resigned as professor of pediatrics at the New York Polyclinic Medical School and Hospital, and his resignation took effect June 1, 1918.——Drs. George E. Vincent and Livingston Farrand have returned from France, where they have been engaged in antituberculosis work for the Rockefeller Foundation.

Program of War Camp Community Service.—The Rockefeller Foundation has contributed $25,000 as an initial step to make possible a demonstration of a plan of adequate care and entertainment of negro troops in a typical war camp community. In explaining the reasons for the appropriation, the announcement says that while plans have been evolved in all the communities, no carefully developed program has been worked out. The medical departments of the Army and Navy, the state and the federal health service, the Red Cross, the training camps commission, the Y. M. C. A., and similar organizations are to cooperate with the American Social Hygiene Society in the demonstration. More than $135,000 is available for the work.

Women Demand Control of Medical College.—An appeal has been made to the New York Board of Regents by a committee of women physicians and surgeons, who are members of the medical board of the New York Medical College and Hospital for Women, asking that the charter of that institution be revoked and a new charter issued forthwith which will place the institution permanently under the control of women workers. It is claimed that certain men physicians on the board of trustees have violated the provision of the charter, that the institution's functions shall be largely educational, in that they have adopted a resolution abolishing the college and clinic of the institution and dismissing the teaching faculty. It is also contended that the meeting at which these resolutions were adopted was irregular and was held without due notice. The men who passed the resolutions abolishing the college contend that the college and dispensary were being conducted at a loss. The board of regents has promised an early ruling.

Threatened Dissolution of Alliance Between Hospital and University.—The alliance between Columbia University and the Presbyterian Hospital, which was made in 1911, and was to have resulted in the establishment of a great medical center which should combine Columbia College of Physicians and Surgeons and the Presbyterian Hospital into a new institution to be erected on Gun Hill Road in the Bronx, is about to come to an end. The board of managers of the hospital have asked the trustees of the university to join with them in cancelling the agreement. This request came before the board of trustees of Columbia University and was referred to the committees on education and finance of the board of trustees. President Butler has issued a statement declaring that the cooperation which has existed between the hospital and the university has worked admirably and to the advantage of both institutions. The difficulties which have arisen relate solely to the plans for future development. The hospital has been fortunate in raising funds which would defray its part of carrying out the plans for consolidation, whereas all the efforts made by the university to obtain funds to meet its share of the obligation have been futile. It has also been found that the total cost of the amalgamation would far exceed the original estimates of $15,000,000.

PENNSYLVANIA

Philadelphia

Fly Campaign.—Dr. Wilmer Krusen, director of public health and charities, in his weekly bulletin urges methods for combating the fly—the enemy at home. He especially urges that fly traps and fly paper be put in the homes, that foodstuffs be kept under cover, that sinks be kept clean and that all garbage be kept in a tightly covered receptacle.

University Chair Endowed.—A $50,000 bequest to the University of Pennsylvania is included in the will of the late Dr. William C. Goodell. In the event of the estate not equaling the total of the university bequest a trust fund is to be created and a bequest paid from the income in instalments. The money is to be used to endow a chair of gynecology.

Personal.—Dr. Judson Daland has been placed on active duty as consulting physician to the Fourth Naval District, which includes Philadelphia, with the rank of lieutenant-commander.——Raymond M. Trice, Philadelphia, attached to the central medical department, American expeditionary forces, has been awarded the Croix de Guerre for services near Paris during one of the recent air raids.

TENNESSEE

District Association Meetings.—The West Tennessee Medical and Surgical Association held its annual meeting, May 24, and elected the following officers: president, Dr. John Yarbrough, Covington; vice presidents, Drs. John D. Brewer, Newbern, and Hermon Hawkins, Jackson; secretary-treasurer, Dr. R. A. McSwain, Paris, and assistant secretary, Dr. George R. McSwain, Paris. Dyersburg was selected as the next place of meeting.——The forty-eighth semiannual meeting of the Middle Tennessee Medical Association was held in Shelbyville, May 16 and 17. Columbia was designated as the next place of meeting. Dr. Jesse F. Adams, Bradyville, was elected president; Dr. John Witherspoon, Nashville, vice president, and Dr. Milton Tharp, Nashville, secretary-treasurer.

Personal.—Dr. W. H. Brice, Mount Pleasant, is seriously ill at his home, as the result of taking poison by mistake instead of quinin.——Dr. J. B. Bond, superintendent of the Western Hospital, Bolivar, has resigned and will resume practice at Union City.——Drs. Reese Q. Lillard, Lebanon, secretary and executive officer, and Harrison H. Shoulders, assistant secretary and registrar of vital statistics, of the Tennessee State Board of Health, have resigned.——Dr. Olin West, Nashville, has been elected secretary of the state board of health, succeeding Dr. Lillard.——Elmo W. Mitchell, superintendent of the Eastern Hospital for the Insane, Nashville, has resigned and will resume practice at Crossville.——Dr. Christopher C. Carpenter, Fayetteville, has succeeded Dr. Charles L. Goodrich as local railway surgeon.

CANADA

Personal.—Lieut.-Col. John Nisbet Gunn, Calgary, Ont., commanding officer of the 8th Field Ambulance in France, who is home in Toronto on sick leave, has received word by cable that he has been awarded the Distinguished Service Order.——Lieut.-Col. Archibald L. C. Gilday, Montreal, who went overseas as medical officer to a Montreal battalion and was promoted to the rank of commanding officer of a field ambulance, returned to Montreal, June 5, on sick leave. He was wounded just six weeks ago, and it is considered quick work to have a wounded officer returned to Canada in so short a time.——Among those decorated for service, in the King's birthday honor list, is Major Theodore A. Lomer, C. A. M. C., who received the D. S. O. Major Lomer was medical officer of health for Ottawa when he enlisted with the first contingent. He has served in France more than three years. Major Lomer was for a time on the staff of the Montreal General Hospital. He was superintendent of the Alexandra Hospital, Montreal, when he resigned to become medical officer of health for Ottawa.——Capt. Gerald Allison, R. A. M. C., Picton, Ont., has returned to the front after a few weeks' furlough in Canada. Captain Allison has served in Egypt, Gallipoli, India and France.——Lieut.-Col. Harold R. Ker, C. A. M. C., has been ordered to report at Halifax, N. S., under appointment as assistant director of medical services in charge of wounded soldiers from overseas.——Capt. Henry Crassweller, formerly of Windsor, Ont., who has been in active service more than three years, is reported missing. He was with the R. A. M. C. in Egypt, and later on the Saloniki front.

GENERAL

Railway Surgeons Hold Meeting.—At the annual meeting of the Central Georgia Railway Surgeons' Association held in Montgomery, May 16, the following officers were elected: president, Dr. Walter E. Saunders, Arlington, Ga.; vice presidents, Drs. Charles A. Thigpen, Montgomery, Ala., and George L. Alexander, Forsyth, Ga.; secretary-treasurer, Dr. Craig Barrow, Savannah, Ga.

New Section on Medicines.—A commodity section on medicines and medical supplies has been incorporated by the War Industries Board. Lieut.-Col. F. F. Simpson will be chief. The new section will deal with surgical supplies, instruments, dressings, serums, and other hospital and medical supplies, and will cooperate with the work of the chemical division in dealing with fine chemicals, photographic chemicals, etc.

Personal.—Dr. J. Christ-O'Day, formerly of Mankato, Minn., and Oil City, Pa., delivered an address at a town mass meeting held, April 21, in Honolulu, urging the establishment of a permanent internment camp in the territory of Hawaii.——Senior Surg. Charles E. Banks, U. S. P. H. S., in charge of the Camp Funston Civil Sanitary District, with headquarters at Manhattan, Kan., has been appointed medical director of the War Risk Insurance Bureau, with headquarters in Washington, D. C.

Antityphoid Inoculations Free.—The Treasury Department authorizes the statement that in order to protect the health of workers and others at a time when the labor of every man possible is needed, the U. S. Public Health Service has been directed to give antityphoid inoculations without charge to all who apply to any of its hospitals or field offices. This will include the territory in the extracantonment zones, U. S. Marine hospitals, etc. Other preventive measures, such as the disposal of excreta, are being vigorously applied.

Army School of Nursing.—The Secretary of War has authorized the Surgeon-General of the Army to establish an army school of nursing with branch training schools in various selected military hospitals throughout the United States. The necessities of the war required the establishment of this training to supplement the present supply of trained graduate nurses. The opening of this course of nursing will give opportunity for patriotic young women to become army nurses. The courses in nursing will conform, as far as possible, to the courses in the civil hospitals, and diplomas will be granted, providing these hospitals remain open long enough to complete the course in accordance with present civil hospital standards.

Optical Industry Organized for War Service.—In compliance with the request of the government for the mobilization of industry for aiding in the prosecution of the war, a meeting of optical manufacturers in New York, May 15, resolved to appoint a war service committee to represent the entire optical industry. A subcommittee of this committee, appointed to report on organization, submitted to the main committee a series of resolutions for adoption pledging the support of the optical manufacturers in securing accurate information with respect to the facilities of the industry; in acting with the priority committee of the war industries board in establishing rules for the distribution of materials, manufacture and transportation; in cooperating with the departments of the government with advice relating to matters affecting the optical industry, and in presenting to the government for consideration all questions relating to the optical industry in which the government is interested.

Bequests and Donations.—The following bequests and donations have recently been announced:

People's Hospital, New York City, $50,000, the proceeds of a benefit theatrical performance.

Long Island College Hospital, Brooklyn, as residuary legatee, $265,044 as its share of the estate of Charles W. West.

Birchard Library, Fremont, Ohio, $2,000, to be used for the purchase of medical books; and for the Sandusky County Medical Society, his medical library, by the will of Dr. Martin Stamm.

Madison, Wis., General Hospital Association, the Clark apartment building, Madison, Wis., valued at about $70,000, by the will of Miss Lucinda W. Rice.

Children's Memorial Hospital, Chicago, $10,000 by the will of Mrs. Potter Palmer.

Harvard Medical School, a donation of $7,500, the income to be used annually to present a gold medal and $500 in cash to the person who may discover in any branch of science means that will result in the greatest good to humanity in connection with the prevention of disease, and the conservation of health, by M. Douglas Flattery.

Michael Reese Hospital, Chicago, $20,000 by the will of Joseph Schaffner.

Fort Wayne, Ind., Lutheran Hospital Association a donation of the property of Dr. Herman Duemling, valued at $8,000 by Dr. Herman A. Duemling.

The clinical building of the Medical College of Georgia, Augusta, $125,000, and for the establishment of a camp for the treatment of tuberculosis, $75,000, by the will of J. B. White, Augusta.

Mailing of Liquids and Oils in Glass.—In Order No. 1490 the Postmaster-General gives revised rules for shipment of admissible liquids and oils not exceeding the limit in weight of fourth class mailing matter, giving the manner in which they shall be packed, etc. Admissible liquids and oils, salves, pastes and other articles easily liquefiable shall be accepted for mailing regardless of the distance, when they conform to the conditions prescribed. The following directions are of interest to physicians: When in strong glass bottles holding 4 ounces or less, the total quantity of liquid shall not exceed 24 ounces. Each bottle shall be wrapped in paper or other absorbent and placed in a box of cardboard or other suitable material and packed in a container made of double-faced corrugated pasteboard of good quality, with tight corners and sealed with tape to prevent escape of liquid, the whole parcel to be securely wrapped with strong paper and secured with twine. Liquids in strong glass bottles holding more than 4 and not more than 16 ounces must be inclosed in a block or tube of metal, wood or papier-mâché, and there must be between the bottle and the block or tube a cushion of cotton, felt or other absorbent. The block or tube must be at least ⅛ inch thick for bottles of 8 ounces or less and at least 3/16 of an inch thick for bottles holding more than 8 ounces. The container must be rendered water-tight by an application of paraffin or other substance to the inside, and must have a screw top, with a washer so that no liquid can escape if the bottle should be broken. Such bottles may also be packed in tight receptacles of wood, metal or waterproof corrugated pasteboard, if surrounded with bran, sawdust or other absorbent in sufficient quantities to absorb all the liquid if the bottle is broken. Larger bottles may also be shipped, if packed in strong boxes surrounded with sawdust or other substance which will prevent breakage, but must be marked "Fragile. This side up," and must be transported outside mail bags.

FOREIGN

Japanese Mission to Study Typhus.—The *Policlinico* reports that a party of Japanese physicians, in charge of Dr. K. Mogi, has arrived in Roumania to study typhus. The party expects to remain eight months for the purpose.

Carnegie Hero Prizes for Civilians.—The *Riforma Medica* relates that among the prizes distributed recently at Rome by the board of the Carnegie Foundation were some to the nuns who have charge of the city hospital at Udine, in recognition of their devotion in remaining at their posts and tending the sick and wounded during the recent bombardment of the hospital.

Scabies at Amsterdam.—Scabies is so prevalent now at Amsterdam that two dispensaries have been arranged and another is planned to which all the scabies patients are sent. The other members of the family are given treatment also, and the bed and body linen is disinfected. The authorities hope to stamp out the epidemic before the increasing scarcity of sulphur will render treatment more difficult.

Dogs Trained as Guides for the Blind.—The *Hospitalstidende* quotes a German exchange to the effect that an institution was organized in 1917 in Germany to train dogs to serve as guides for the blind. Dr. Bauer is in charge of the work, and he recently exhibited five dogs that had finished their training. They not only serve as guides but warn the blind man they are leading of every obstacle, watch out for anything he may drop, and, in short, it is said, serve as a friend and protector as well as guide.

A New Enslaving Drug.—The *Nederlandsch Tijdschrift* states that the combination of morphin, cocain and caffein which is marketed under the name "trivalin" is sowing addictions broadcast, as the advertisements state that the combination deprives cocain and morphin of their dangerous properties. Müller of Godesberg recently reported that he had had occasion to treat eleven cases of addiction from this drug. The consequences and symptoms are those mainly of cocain poisoning. All the patients had been given the drug first by a physician with the assurance that it was less harmful than the opiates. The odor of valerian about the drug is an advantage as this would deter some from using it.

American Poets' Ophthalmic Ambulance.—The *British Medical Journal* describes the ophthalmic motor ambulance given to the Italian army by the group of American poets. It was designed by Professor Busi of Bologna and Major Balestra, and the whole packs into a trolley of the dimensions required by the railway authorities. It provides a small operating room with wooden walls and roof covered with impermeable canvas, and a waterproof tent mounted on iron frames with a rainproof roof. This forms the reception room and also on occasion a radiologic cabinet and ophthalmoscopic examination room when it is covered inside with black cloth. The *Riforma Medica* states that the ambulance has been completed and has already left for the front in charge of Major Alfonso Neuschuler.

Premiums for Breast Feeding.—The *Nederlandsch Tijdschrift* quotes a Berlin exchange to the effect that the number of women nursing their children nowadays is much above the average before the war. The infant death rate shows a corresponding decline. The authorities ascribe the greater prevalence of breast feeding to the premiums given nursing mothers. Each mother has to apply weekly for the premium and bring the child, and consequently an opportunity is thus afforded for instructing the mother in the care of the child. This combination of premiums and consultations is proving of the greatest advantage in reducing the infant death rate. It is suggested, however, by the *Tijdschrift* that the scarcity of food for the children may have something to do with the increase in breast feeding.

Public Warning Against Venereal Diseases in the Netherlands.—The *Nederlandsch Tijdschrift* gives the text of a circular of about 400 words warning of the dangers of venereal disease for the individual and for the nation, and the importance of early and thorough treatment. It is issued by the Public Health Service of the Netherlands, sanctioned by the minister of the interior, and it is to be made public throughout the country, although it is not mentioned how this is to be done. It is emphasized in the circular that, "generally speaking, there is no danger from the venereal diseases for those who refrain from extra-conjugal sexual relations, but that the danger of contracting venereal disease is greater now than ever before, as the war has brought about unprecedented conditions in our land also, and brought into the country many foreign elements, including many undesirable elements."

Death of Forlanini.—The cable brings word of the death of Dr. Carlo Forlanini of Pavia, the inventor of the method of treating pulmonary tuberculosis with induced pneumothorax, aged 71. Until he reached the age limit he was professor of physiology and clinical medicine at the University of Milan, and was always interested in aerotherapy and medicopneumatic measures. It was in 1894 that he published what he called "The First Attempt to Treat Pulmonary Tuberculosis with Artificial Pneumothorax," and the following year published the "First Case of Monolateral Advanced Pulmonary Tuberculosis Successfully Treated with Artificial Pneumothorax." He has published numbers of works on this and other subjects, notably on venesection in treatment of uremia, on the influence of tobacco, alcohol, morphin and caffein on the arterial circulation in a case of a large gap in the skull, and on thoracentesis with introduction of filtered air (1902).

Discussion of Venereal Diseases in the German Senate.—The *Nederlandsch Tijdschrift* relates that a bill pending in the German Reichstag imposes a penalty of 10,000 marks or a prison term of one year on any who treats venereal disease without being a qualified physician. The promoters of the bill stated that with this penalization the bill must stand or fall. It was adopted in the committee by a vote of eighteen for and seven votes against the measure. In the discussion, one of the members insisted that the present laws against personal injury cover the subject, and that there is no need for further legislation. Another member remarked that many qualified physicians have turned aside from "school medicine," and that the worst forms of advertising were introduced into the world by physicians. He also stated that the working classes have lost confidence in "school medicine" on account of the treatment by the social insurance physicians of the insured, adding, "Qualified physicians are themselves to blame for the resort to the nature healers by such a large part of the populace." (There are said to be 12,000 nature healers in Germany at present.) Another member contended that whether there are ignorant or careless physicians has nothing to do with the bill. "The question is to determine the minimum of knowledge compatible with the treatment of venereal diseases." A penalty of 1,000 marks and prison term of six weeks was demanded for those who, knowing that they have some venereal disease, neglect to have it treated by some qualified physician. After much discussion this measure was adopted except that the fine was reduced to 500 marks and the prison term to four weeks.

SOUTH AND CENTRAL AMERICA, MEXICO AND WEST INDIES

Adulteration of Drugs.—The Public Health Service of Mexico has sent out notices to the governments of the different states warning against three falsified drugs which have been found in the City of Mexico. Pharmacists are warned to be on the lookout. One of the drugs is labeled benzonaphthol, but is merely calcium silicate; it bears the apocryphal label "Riethel." Another is simply acetanilid, labeled cocain chlorid from the Mallinckrodt firm at St. Louis. The third drug thus falsified is euchinin, which consists merely of calcium carbonate and a little quinin sulphate.

Deaths in the Profession Elsewhere.—**Dr. Sanchez Toledo**, a Cuban physician long practicing in Paris, aged 58. He was the representative of Cuba at various international gatherings, and during the present war has been serving in a Red Cross hospital.——**Dr. M. G. Zavala**, professor of obstetrics in the Facultad de Medicina of Mexico, aged 68.

CUBA LETTER

Havana, May 26, 1918.

Contagious Diseases in Cuba

One hundred and five cases of typhoid fever have been reported in Havana during the last month. Typhoid vaccine is supplied free of charge in all branches of the board of health department. In the interior of the island, typhoid fever has also shown an increase over the statistics of former months, but this small epidemic is by no means threatening, according to the health authorities.

Malaria does not exist in Havana except when imported from other communities, Oriente and Camagüey, where there are various foci to which the board of health is now attending. Last year, 133 malaria patients died in Oriente, and twenty-eight in Camagüey. Professor Guiteras, director of sanitation of Cuba, has proved that most of those cases were imported with the negro laborers who came to work in the sugar cane fields from Haiti and Jamaica.

The campaign against these two diseases is being carried on conscientiously, and their early control is expected.

Cuban Physicians and Nurses to the Front

The Cuban senate has passed a bill ordering 100 physicians and surgeons to go to lend their services in the Allied hospitals in France.

The Cuban Red Cross has selected twelve nurses, who will be sent to France after a short period of training.

Death of Dr. Sanchez Toledo

Dr. Domingo Sanchez Toledo, a Cuban physician practicing in Paris and a captain in the French medical reserve corps, died in France last month. He was a brother of Dr. Miguel Sanchez Toledo, professor of physiology in the University of Havana.

LONDON LETTER

London, May 14, 1918.

The Outbreak of Acute Infective Ophthalmoplegia

The outbreak of acute infective ophthalmoplegia in London and other places in England has already been described (The Journal, June 1, 1918, p. 1619). Some further particulars may now be given. Against the suggestion that it is the form of food poisoning known as botulism is the fact that a case has been observed in an infant at the breast and another in a vegetarian. Moreover, no one article of food has proved to be responsible. Some cases have simulated meningitis, and in others the suggestion has been made that the cases are poliomyelitis of unusual distribution in the nervous system. The duration of illness has varied from six weeks or longer to a few days. The onset of illness may be sudden or gradual. The one constant symptom is the rapid development of languor and drowsiness. This may be the most pronounced symptom throughout. The patient as a rule does not become completely unconscious. He lies in bed like a log, but is easily aroused. The respirations are increased in number. The pulse is not rapid. There is a moderate amount of pyrexia in the earlier stages. Muscular tremors, especially of the eyeball, are a marked symptom in some cases. Usually there is unilateral or bilateral weakness of muscles supplied by the third, fourth or seventh cranial nerves. Ptosis is very frequent. As a result of the weakness of the facial muscles, the patient's face commonly has a masklike appearance. Constipation is usual. Retention of urine frequently occurs. There is marked dryness of the mouth and throat, and may be some dysphagia. The mouth, as well as the general condition, may simulate uremia or the typhoid condition. Death, which has occurred in a large proportion of the severe cases so far observed, seems to be due to bulbar paralysis.

Ophthalmologists and Public Affairs

At a representative meeting of ophthalmologists at the rooms of the Royal Society of Medicine, it was decided to form a council to take action in matters of ophthalmologic interest in connection with public affairs. In proposing the resolution, Sir Anderson Critchett said it would meet a definite need and would tend to weld the elements of ophthalmology more closely together, as well as making for the welfare of the public. Mr. Richardson Cross seconded, remarking that governments and governing bodies require expert advice in order to be efficient, and that the best experts are those who enjoy the confidence of their colleagues in that special line of practice. Owing to the amalgamation of the journals devoted to ophthalmology into one organ, and the representation on the Ophthalmological Society of the various similar bodies in the kingdom, the profession is now well organized and can present a powerful front on all questions specially concerning it. He instanced ophthalmia neonatorum, navy and army visual standards, visual and lighting requirements in various kinds of industry, organized inquiries concerning the blind, grades on compensation payable according to degrees of visual disability, and so on. Mr. J. B. Lawford, in supporting the resolution, said that the days are rapidly passing when we can afford to ignore scientific discoveries and the new methods based upon them. He believes that more attention will be paid in future to the views of representative bodies, and less to the opinions of individuals, however eminent. The state is now more and more assuming the rôle of parent, and, like other parents, will be all the better for sound advice. He would like to see ophthalmology made a compulsory subject of the medical curriculum, a matter on which we are much behind other civilized countries. At present, a man receiving the minimal qualifying medical diploma can at once take up the practice of ophthalmology; and if the proposed committee should do no more than insist that men should not take up this work without special training, it would fully justify its formation. It was decided that the Council should consist of all the past and present presidents of the Ophthalmological Society of the United Kingdom, and of the Section of Ophthalmology of the Royal Society of Medicine as permanent members, four members nominated annually by the councils of each of these societies, and one representative from the Oxford Ophthalmological Congress.

Physical Deterioration of Boys Under War Conditions

In a letter to the *British Medical Journal*, a physician practicing in a munition area calls attention to the dangers that beset boys between the ages of 14 and 18 (that is, up to the military age) under the present abnormal conditions. Three or four years of absence of paternal control (because their fathers have joined the army), of practically unlimited supplies of money and cigarets, lack of sufficient sleep through frequent cinemas and music halls, and finally, in many cases a tendency to indulgence in alcoholic drinks, must all exact an inevitable toll on the growing boy. In many instances mere boys have become physical and moral wrecks. The trouble can be traced to the high wages, $15 or $20 a week, which these boys earn. For this the government is responsible. At the beginning of the war the obtaining of munitions in sufficient quantities was all important. In order to avoid trouble with labor, wages for piece work were fixed at a high figure, sometimes ridiculously high, so that unskilled persons were able to earn three or four and even more times the wages they received before the war. Probably for the same reason—a desire to avoid trouble with labor—these wages have never been altered. The physician in question suggests that no one under the age of 18 should be allowed to receive more than $7.50 a week, and that the remainder should be held in trust till the war is over.

The Latest Ambulance Train

A short time ago I described an ambulance train constructed in this country for the American Army which was then the last word in ambulance trains. But progress never stops. A train has just been constructed for the use on the continent, probably in Italy, and is being exhibited by Red Cross officials in London and other cities. In general design and internal arrangement this train closely resembles the one made for the American Army. Certain mechanical modifications were suggested by recent experience. Painted khaki color outside and white inside, this train is 960 feet long and weighs 440 tons. There are sixteen coaches, providing accommodation for 342 cot patients, besides infectious and mental cases in special isolation wards. There are also sitting and dining compartments for officers; staff, pharmacy, and personnel cars; two kitchen cars; refrigerating chambers for perishable food, store rooms, linen presses, and brake vans. The windows are fitted with "louvre" blinds covered with wire netting to keep out the flies, and ventilation and sanitation are carried out on the most approved principles. More than 3,000 gallons of water are carried on the train, and the two kitchen cars can supply about 50 gallons of hot water at any time. The train is electrically lighted and fitted with detachable electric fans throughout. It is steam heated, and the staff and personnel cars have a special self-heating apparatus which can be brought into use when the engine is not attached. The beds for the patients have been specially designed, and can, if necessary, be used as stretchers.

PARIS LETTER

Paris, May 9, 1918.

Plastic Operations on the Skull

At the request of the army medical department, this subject was discussed at a reunion of the members of the Société de neurologie de Paris and of the chiefs of the Centres neurologiques d'armées and de l'intérieur. Dr. Louis Mourier, undersecretary of state for the Service de santé militaire, presided. The conclusions contained in a report made by Dr. Georges Guillain, professeur agrégé à la Faculté de médecine de Paris and médecin des hôpitaux, were adopted by the assemblage as follows: Before a cranioplasty is done, the *trépané ancien* should be systematically examined from the neurologic standpoint. Cranioplasty is contraindicated when (1) there is present any nervous trouble connected with modifications in the circulation in the brain; (2) if the cerebrospinal fluid is not absolutely normal as to tension, chlorids and albumin content, and if it contains leukocytes; (3) if ophthalmoscopic examination discloses the existence of a papillary stasis or choked disk; (4) if the patient shows partial or general epileptic phenomena; (5) if the roentgen rays reveal an intracranial projectile; (6) if the patient has exhibited serious meningeal symptoms. In those cases in which the extensibility of the cicatrix seems to be the cause of nervous symptoms, it is wise, before undertaking any plastic operation, to make sure that these symptoms will disappear on the application of a protective external plate.

From the medicomilitary standpoint, any decision that may be taken should be based, above all, on the proper appreciation of the cerebral or mental condition. All reserves made so far as concerns the brain trouble, an extensive loss of cranial substance, whether a plastic operation has been done or not, does not mean, in itself alone, obligatorily and immediately, a retirement pension, but only, and during a period of four years, an invalidism with renewable allowance equal to a retirement pension.

Nerve Suture

The question of nerve suture was also discussed at this meeting. In a general way, in cases in which there is no evidence of the return of motion or sensation, an unfavorable opinion should not be given until two years have elapsed after the date of the suture. During this waiting interval the patient is invalided temporarily and examined several times by the same neurologist. In cases presenting evidence of a possible return of function, it is impossible to foretell the period of time that must elapse before the case can be pronounced incurable. The patient after suture should be treated in the same neurologic center in which the suture was done, and for as long as is judged necessary by the chief of the center. The latter is the one to determine, according to the case, the moment when the incurability can be shown. The réunion also passed a resolution to the effect that after sufficiently long treatment of those patients who show signs of progressive regeneration, the chiefs of the centers should be authorized to send them away either on repeated leaves of absence during convalescence or on renewable *congés de travail*, with return to the center for further examination and final decision.

Nerve Prostheses

It was also stated at this meeting that patients with nerve injuries supplied with prosthetic apparatus intended to remedy transient motor insufficiencies often continue to use such apparatus although certain movements have already returned. Some of those keeping on with the use of the apparatus believe that it is still necessary to their progress; others, although recognizing that it should be worn only temporarily, continue to wear it, either for ostentation or to hide the improvement which they have made. The réunion insisted that all men who have been using such an apparatus for more than six months should be examined in the center where it was ordered, to determine the necessity for further wear or to discontinue its use, and also to make such changes in its construction as may be needed.

Autochthonous Malaria

At the Réunion médico-chirurgicale de la III-e Armée, Drs. Grysez and Pierret reported on cases of malaria seen in the army during 1917, in which the diagnosis had been confirmed in the laboratory. Among the thirty-two cases there were twenty-four of autochthonous malaria. These patients had never had malaria previously, they had never been out of France, and they inhabited regions that were nonmalarial. In twenty-three cases the *Plasmodium vivax* was the cause; the *Plasmodium falciparum* was encountered in only one case. This particular patient had lived in Paris during peace times, had never been outside of France and had never had malaria before. He had been stationed for several months in the neighborhood of troops from Morocco and had contracted a tropical fever, confirmed by the presence in the blood of rosettes and crescents. Dr. Rieux discussed the symptomatology of primary autochthonous malaria. In the cases observed, the first impression was that they were not malaria but cases of typhoid and paratyphoid fever. Nevertheless, even then certain differential clinical signs were present which are not of the symptomatology of the last named diseases: the onset generally with distinct febrile manifestations; bilious vomiting, pulse rapid and thready; finally, the apparently contrary fever curve, with some falls of the temperature more or less brief in duration. These particulars are always important in the early clinical diagnosis of primary tertian malaria, which does not in its initial manifestations resemble the established tertian or double tertian type—secondary tertian malaria. If the clinical evidence is in favor of primary malaria, blood examination and the finding of the hematozoon will remove all doubts.

Primary Retarded Suture of War Wounds

Dr. A. Chalier of Lyon recently reported to the Société de chirurgie de Paris thirty-two observations of war wounds which he has treated by retarded primary suture, that is to say, not in the first twelve or twenty-four hours but after the thirty-fifth, the fortieth hour, even up to intervals of three, four, five and even eleven days. Up to the present it has been admitted that primary union of war wounds should be attempted only, with prudence, when the wound has been cleaned in a very thorough manner before the twelfth hour, in the preinfectious stage, and when systematic bacteriologic control has failed to reveal the streptococcus. Now, Chalier's cases demonstrate that the game need not be considered lost if the patient does not arrive in the first twelve hours, and even if bacteriologic control is not possible. In fact, in the absence of a bacteriologic examination it is often possible to decide whether the wound is seriously or only slightly infected by the aspect of the wound and surrounding tissues, and by estimating the general condition of the patient: An infected wound, in the bacteriologic sense of the word, may be only very slightly so from the clinical standpoint. These wounds can often be sutured, provided they can be kept under close surveillance. The thirty-two delayed sutures of Chalier's cases gave rise to only three occasions for reopening the wound. In the remaining cases the convalescence was uncomplicated and the final results were as good and achieved as rapidly as in the cases of early primary suture; the scars were linear and soft and nonadherent. Many of these patients rejoined their corps in less than a month, including even their leave of convalescence, in spite of the fact that these patients had been seriously wounded, with bone lesions in five cases and projectiles in the tissues in seventeen cases.

Chalier insisted that between early primary suture—the ideal method, and nearly always applicable in the cases in which operation is performed within twelve or twenty-four hours—and secondary suture, done later in cases that had previously been disinfected surgically, chemically or spontaneously, there is a place for a late primary suture, which is applicable only to certain cases in which there is only slight infection. Dr. Potherat stated that he, too, had treated by retarded primary suture wounds of the soft parts which had been inflicted three, four, five, six and even nine days previously. Dr. Pierre Delbet, professor of clinical surgery in the Faculty of Medicine of Paris, stated that he had recently treated some patients between twenty-two and forty-eight hours after they had been wounded. Several were infected bacteriologically but, in spite of this, he made a free excision and sutured the wound tightly without drainage. The results had far surpassed his expectations.

Cross of Legion of Honor for Military Nurses

Contrary to the custom in vogue as applying to civilians, the cross of the Legion of Honor conferred on army people carries with it pecuniary advantages (varying according to the degree conferred). It was recently decreed that these benefits should be extended, under certain conditions, to the military nurses and the Red Cross nurses mobilized in the *formations sanitaires* of the army.

Treatment of Bone Tuberculosis

The administration of the Assistance publique has decided, in accordance with a report made by M. Rendu, member of the city council, to establish at Salies-de-Béarn a center for the treatment of bone tuberculosis in children. Such children will be treated here as were sent during times of peace to Berck-sur-Mer.

Brazilian Medical Mission

A party of Brazilian military surgeons who came to France under the leadership of Dr. Rodrigo Bulcao for the purpose of studying the work of the Service de santé, have gone to the front.

Marriages

Major W. Wayne Babcock, M. R. C., U. S. Army, Philadelphia, on duty at Fort McPherson, Atlanta, Ga., to Miss Marian C. Watters of Swarthmore, Pa., June 10.

Lieut. Fred Lawville Rhodes, M. R. C., U. S. Army, Toledo, Ohio, to Miss Mary Z. Howard of Columbus, June 4.

Frederick William Jones, Verden, Okla., to Miss Blanche E. Armstrong of Oklahoma City, Okla., March 31.

Arthur Galloway Beall, Hutchinson, Kan., to Miss Hattie May Stewart of Kansas City, Mo., June 1.

Malcolm Robert Markson, Calumet, Mich., to Miss Irene H. Wright of Hancock, Mich., May 18.

E. Bert Wiley to Mrs. J. K. Scott, both of Helena, Mont., at Bozeman, Mont., May 17.

E. Freeman Robbins to Miss Maude Farrar Taylor, both of Houston, Tex., May 29.

Deaths

John Edward Jones, Altha Hall, Alexandria County, Va.; George Washington University, Washington, D. C., 1897; aged 51; consul and consul general at Dalny, Manchuria, in 1905 and 1906, consul at Winnipeg, Man., in 1907 and 1908, and consul general from 1908 to 1913; consul general at Genoa, Italy, from 1913 to 1915, and since that time consul general at Lyons, France; for sixteen years a member of the staff of the Washington *Evening Star;* died at his home, May 20, from nephritis.

George W. Berntheisel, Columbia, Pa.; Jefferson Medical College, 1866; aged 74; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of Pennsylvania; and once president of the Lancaster County Medical Society and Columbia College of Physicians and Surgeons; a veteran of the Civil War; president of the Medical and Surgical Staff of the Columbia Hospital; died in that institution, May 28, from cerebral hemorrhage.

Neil Jamieson Hepburn, New York City; College of Physicians and Surgeons in the City of New York, 1868; aged 71; a Fellow of the American Medical Association; and a member of the American Ophthalmological Society, and American Otological Society; consulting ophthalmologist to the Manhattan Eye, Ear and Throat Hospital, and the Paterson (N. J.) Eye and Ear Infirmary; a veteran of the Civil War; died at his home, May 28.

Alfred Wiles Schooley, Braddock, Pa.; Jefferson Medical College, Philadelphia, 1871; aged 70; a member of the Medical Society of the State of Pennsylvania; for nearly forty-five years a member of the medical staff of the Pennsylvania Railroad; also surgeon for the Pittsburgh and Lake Erie Railroad; dean of the medical staff of the Braddock General Hospital; police surgeon of Braddock; died at his home, May 24.

Nathan Ryno Garter, Baltimore; University of Maryland, Baltimore, 1879; aged 57; a Fellow of the American Medical Association; and a member of the Legislative Committee of the American Medical Association; for several terms a member of the state board of health; commissioner of health of Baltimore from 1913 to 1915; died at his home, June 1, from septicemia, following an infection of the throat.

Richard H. Smith, Kokomo, Ind.; Medical College of Indiana, Indianapolis, 1880; aged 72; a member of the Indiana State Medical Association; also a druggist; for many years coroner of Howard County; for several terms treasurer of the Howard County Medical Society and a member of the board of health of Kokomo; died at his home, May 29, from uremia.

Walter Darwin Williamson, Portland, Maine; University of Vermont, Burlington, 1888; aged 54; a Fellow of the American Medical Association; and once president of the Maine Medical Association; a member of the surgical staff of the Maine General Hospital, and of the National Association of Railway Surgeons; died at his home, June 2, from nephritis.

Lieut. Wyvern Almon Coombs, M. C., Maine N. G., Westbrook, Maine; Bowdoin Medical School, Brunswick and Portland, Maine, 1913; aged 27; a Fellow of the American Medical Association; on duty at Camp Greenleaf, Fort Oglethorpe, Ga.; was thrown from his horse at Camp Greenleaf, April 20, and died from his injuries, April 23.

Lyman F. Babcock, Deadwood, S. D.; Rush Medical College, 1864; aged 79; formerly a Fellow of the American Medical Association; whose fifty-first anniversary in the practice of medicine was celebrated at the annual meeting of the Black Hills District Medical Association in 1915; died in the Yankton State Hospital, May 30.

Frederich Curt Harnisch, Chicago; University of Leipzig, Germany, 1890; aged 57; a Fellow of the American Medical Association; a specialist in ophthalmology; ophthalmic surgeon to Alexian Brothers', St. Elizabeth's, and St. Mary's of Nazareth Hospital; died in the Alexian Brothers' Hospital, Chicago, May 25, from heart disease.

David Miller Barr, Philadelphia; Jefferson Medical College, 1864; aged 81; assistant surgeon U. S. Army, and on duty at the Catherine Street Hospital, Philadelphia, in 1864 and 1865; later medical director of sanatoriums in Ocean Grove and Long Branch, N. J.; died at his home, June 2, from myocarditis.

Nicholas Berdan Van Houten, New City, N. Y.; College of Physicians and Surgeons, in the City of New York, 1867; aged 76; a member of the Medical Society of the State of New York; for forty years physician of Rockland County; died at his home, May 29.

Frank Wesley Searles, Mokena, Ill.; Northwestern University Medical School, Chicago, 1877; aged 65; formerly a Fellow of the American Medical Association; died March 26, six days after an operation for a malignant tumor of the pylorus.

Marcus Whiting, Bruce, Wis.; Rush Medical College, 1883; aged 57; formerly a Fellow of the American Medical Association; for many years a practitioner of Peoria, Ill., and alderman from the first ward; died at his home, near Bruce, May 22.

Joseph Alva McCullough, Steubenville, Ohio; Western Reserve University, Cleveland, 1878; aged 62; a Fellow of the American Medical Association; for eighteen years local railway surgeon; died at his home, May 23, from pneumonia.

Raoul S. Dossmann, Ville Platte, La.; Kentucky School of Medicine, Louisville, 1900; aged 40; formerly a member of the Louisiana State Medical Association; coroner of Evangeline Parish; died at his home, May 23.

William Thomas Goldsmith, Washington, D. C.; Medical College of Georgia, Augusta, 1853; aged 87; a surgeon in the Confederate Service during the Civil War; died at his home, May 25, from cerebral hemorrhage.

Lucius Norton Henry, Ripley, Ill.; Miami Medical College, Cincinnati, 1890; aged 48; a member of the Illinois State Medical Society; formerly a druggist; died in Kansas City, March 26, from gastric ulcer.

Samuel Hiatt Burnside, Wichita Falls, Tex.; University of Pennsylvania, Philadelphia, 1882; aged 62; a Fellow of the American Medical Association; died at his home, March 28, from cerebral hemorrhage.

Benjamin B. Fishburn, Lebanon, Pa.; Medico-Chirurgical College of Philadelphia, 1898; aged 47; while walking over a grade crossing in Lebanon, May 27, was struck by a train and instantly killed.

John Bennett, Fowlerton, Tex.; University of Louisville, Ky., 1910; aged 33; formerly a Fellow of the American Medical Association; died in San Antonio, Tex., May 19, from ptomain poisoning.

Isaac Todd Mullen, Chicago; University of Buffalo, N. Y., 1884; aged 76; for many years postoffice inspector in the railway mail service; died at his home in Chicago, May 12, from heart disease.

Seymour C. Williamson, Canisteo, N. Y.; College of Physicians and Surgeons, Baltimore, 1885; aged 77; for one term coroner of Steuben County; died at his home, May 21, from pneumonia.

William Pitt Dunbar, Campbell, Tex.; Vanderbilt University, Nashville, Tenn., 1880; aged 67; a member of the State Medical Association of Texas; died at his home, May 27.

Walter D. Chaffee, South Bend, Ind.; Hahnemann Medical College, Chicago, 1887; aged 52; died at his home, May 16, from nephritis.

Thomas Price Tisdale, Alameda, Calif.; Cleveland University of Medicine and Surgery, 1858; aged 88; died at his home, May 18.

Adin F. Large, Braddyville, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1884; aged 64; died at his home, May 10.

George Alfred Hurst, Dorset, Ohio; Eclectic Medical Institute, Cincinnati, 1884; aged 70; died at his home, about May 12.

Adam Raymond Klein, Muscatine, Iowa; Jefferson Medical College, 1904; aged 42; died at his home, May 18, from pulmonary tuberculous.

John A. Read, Tecumseh, Kan.; Bennett Medical College, Chicago, 1871; aged 83; died at his home, May 16.

Harry J. Brandom, Hettick, Ill.; (license, Illinois, years of practice, 1877); aged 86; died at his home, May 5.

John F. McCarty, Briggs, Tex.; Louisville, Ky., Medical College, 1883; aged 82; died at his home, May 14.

Seymour E. Ball, Eagle Rock, Calif.; St. Louis University, 1903; died about May 9, from cardiac asthma.

Michael J. McTurnan, Rigdon, Ind.; (license, Indiana, 1897); aged 77; died at his home, May 20.

Correspondence

SERUM DIAGNOSIS OF SYPHILIS

To the Editor:—May I point out some fallacies in Dr. Noguchi's answer to my criticism of his proposed new method of performing the Wassermann test in Army and Navy laboratories?

It is true that the presence of native antisheep amboceptors in human serum may cause errors in the Wassermann test when performed with a sheep hemolytic system. His statement, however, that this factor is uncontrollable is not correct. As a matter of fact I am quite certain that most careful workers who use the sheep hemolytic system remove the native antisheep amboceptors from serum before testing it.

Dr. Noguchi frankly admits that with his method a moderately positive serum containing an excess of native complement may give a weaker reaction than would a serum with an average amount of complement. Then by what process of reasoning can he reach the conclusion that a weakly positive serum may not give a negative reaction under the same conditions?

Dr. Noguchi claims that there is no great variation in the complement content of human serums. This is certainly not in accord with the teachings of most authorities on this subject, and is not in accord with my own experiences. During the past two years I have made a large number of native complement determinations on serums which were to be tested in the raw state, and have found the variations quite considerable. A detailed report of this work is now in the course of preparation and will soon be published. It will be sufficient here to point out the fact that some of the procedures advised by Dr. Noguchi for his new test themselves betray a recognition of the existence of this wide complement variation. After the addition of corpuscles and amboceptor to his tests he incubates for one-half hour. At the end of this time some of his controls are completely, and some only partially, hemolyzed; as a matter of fact, a few may have been hemolyzed for from ten to fifteen minutes. Those serums which do not show complete hemolysis in the controls at the end of the half hour period receive another unit of amboceptor and are incubated for another half hour. Those serums which even then do not show a completed reaction are retested with negative human serum as complement. We here recognize variations in complement content ranging all the way from an amount sufficient to bring about complete hemolysis in fifteen minutes with one unit of amboceptor to an amount that will not complete hemolysis in one hour with two units of amboceptor. That these differences represent considerable variations in complement quantities will be readily appreciated by any one who has ever done a complement titration.

As an example of the importance that authorities place on the need of uniformity in complement strength, I may quote C. F. Craig (Observations on the Noguchi Modification of the Wassermann Complement Fixation Test in the Diagnosis of Lues in the Military Service, *Jour. Exper. Med.*, **12**, 726. This refers, of course, to the old Noguchi test). Craig adopted the Noguchi test but used inactivated serum, because he feared that with noninactivated serums a certain percentage of false positives would be obtained. He insists on the careful titration of complement and says, "A whole series of tests may be rendered valueless by a slight loss of strength in the complement."

Dr. Noguchi surely deserves the thanks of all laboratory workers for having devised the technic for preparing acetone-insoluble lipoids for antigenic purposes. I am ready to admit that a good antigen of this kind is usually more highly antigenic and less anticomplementary than one obtained by any other method. That it is anticomplementary, however, is evidenced by the fact that we make anticomplementary titrations on it. No matter what fraction of the anticomplementary unit we accept as our antigen dose, it always carries with it a corresponding fraction of anticomplementary qualities. As I have pointed out in my previous communication, the anticomplementary activity of antigens varies for different serums. Now then, given a serum with the minimum complement content, or one that in Dr. Noguchi's method requires twice the amboceptor dose and from two to four times the hemolyzing time that a maximum complement serum would, and which is unduly sensitive to the anticomplementary qualities of the antigen, it is readily conceivable that a false positive reaction would result.

Dr. Noguchi fails to see any objection to his procedure of adding a second dose of amboceptor to serums whose control tubes are not hemolyzed at the end of the half hour period. I would again refer him to the paper by Ottenberg mentioned in my previous communication, where he will find discussed the fallacy of the assumption that complement deficiency can be safely compensated for by amboceptor excess, and which, I am sure, will convince him that such a procedure is not a safe one.

After all has been said, the fact remains that Dr. Noguchi's proposed new test ignores a complement variation the maximum of which is represented by a hemolyzing time of fifteen minutes, or possibly less, with one unit of amboceptor and the minimum by a hemolyzing time of one hour with two units of amboceptor. If this is permissible, then all our conceptions of complement fixation tests must be revised. Then can a chemist also properly make determinations with sodium hydroxid solutions ranging all the way from a tenth normal to a fiftieth normal, and make all his calculations as though he had been working with a twentieth normal.

Dr. Noguchi's old test is a model of scientific accuracy compared with his present method. And yet Kolmer says, "A positive Wassermann reaction, however, is better evidence of the presence of syphilis than a positive Noguchi reaction, because of the possibility of false complement fixation occurring in the latter when active serums are used." With a good acetone-insoluble lipoid antigen he finds these false reactions to be about 2 per cent. McFarland says, "Unfortunately, it [the Noguchi test] seems to have the demerit of occasionally finding the reaction in negative cases, which is a serious defect." Kaplan says, "All things being equal, the method is fairly reliable, and in my hands gave a positive error of 2.5 per cent." These quotations represent the general opinion of authorities. If Noguchi's old method has a positive error of about 2 per cent., his new method surely has a much larger positive error and also, in addition, a negative error.

What a reflection it would be on science if considerably over 2 per cent. of all those of our Army and Navy who will be subjected to complement fixation tests were to be falsely stigmatized with syphilis. Surely these men now face enough hazards without adding this one. I am still firmly convinced that to use the test proposed by Dr. Noguchi in Army and Navy laboratories for diagnostic purposes would be a great injustice to our soldiers and sailors.

J. J. SEELMAN, M.D., Milwaukee.

BÁRÁNY CHAIR TESTS AND FLYING ABILITY

To the Editor:—In an article on "Bárány Chair Tests and Flying Ability" (THE JOURNAL, April 13, 1918, p. 1064), we presented certain data concerning the Bárány chair tests of 100 naval aviators, and found an absence of correlation between the tests and the flying ability of the men. While, of course, the Bárány tests have in no way been intended to predict the flying ability of applicants for aviation, nevertheless, men who have failed to respond normally to these tests have in most instances, it is understood, been rejected, and rejected solely because of that failure. In other words, the tests have been used to predict inability to fly. If abnormal reactions constitute sufficient grounds for rejecting applicants, then perhaps it may be well to see what actually successful fliers do in a Bárány chair, and what, if any influence flying has on their reactions.

Table 1 shows the results of the nystagmus times of fifty aviators, all of whom were examined twice by the same examiner. The first examination was given before the man's flight instruction began, and the second after he had qualified. The interval between these two examinations varied from forty-six to eighty-eight days. The tables were compiled and submitted by Asst. Surg. C. J. Brown, U. S. Navy, at the Naval Air Station, Pensacola, Fla.

TABLE 1.—NYSTAGMUS TIMES OF FIFTY AVIATORS

Name	Nystagmus Time	
1. J. E.	20	25
After 60 days	25	25
2. F. B.	19	19
After 47 days	8	2
3. E. E. B.	23	21
After 81 days	19	19
4. W. A. B.	26	21
After 51 days	21	18
5. J. S. B.	27	25
After 84 days	15	12
6. J. S. B.	20	11
After 71 days	10	5
7. K. H. C.	22	19
After 60 days	20	17
8. D. D.	21	21
After 67 days	22	24
9. S. S. H.	24	27
After 47 days	11	13
10. A. L. H.	19	17
After 46 days	28	22
11. L. B. H.	20	19
After 55 days	22	19
12. S. C. K.	22	19
After 67 days	14	20
13. K. B. K.	12	11
After 51 days	14	14
14. A. J. L.	24	25
After 66 days	25	27
15. R. L. F. T.	20	19
After 63 days	10	13
16. S. P. W.	30	26
After 84 days	18	21
17. H. M. W.	20	14
After 62 days	17	17
18. W. M. W.	18	17
After 69 days	18	17
19. S. A.	21	20
After 65 days	13	15
20. R. L. A.	18	22
After 70 days	15	16
21. G. T. B.	19	20
After 68 days	15	15
22. T. M. B.	12	13
After 65 days	13	14
23. E. D. B.	16	21
After 82 days	15	19
24. J. F. B.	28	24
After 85 days	12	15
25. E. J. B.	25	26
After 72 days	23	20
26. S. T. C.	19	17
After 58 days	20	20
27. H. R. D.	28	30
After 85 days	38	30
28. J. A. E.	22	20
After 79 days	24	21
29. L. A. H.	27	22
After 56 days	21	19
30. R. H.	8	11
After 61 days	10	12
31. G. S. H.	24	22
After 84 days	12	14
32. C. F. K.	19	24
After 67 days	19	17
33. L. H. L.	17	15
After 66 days	14	10
34. R. R. L.	25	22
After 67 days	20	18
35. T. N. M.	28	24
After 71 days	20	21
36. F. R. M.	24	20
	10	13
37. J. C. N.	14	13
After 51 days	18	22
38. G. T. O.	32	30
After 85 days	17	22
39. W. L. P.	19	33
After 47 days	22	23
40. H. M. P.	22	18
After 84 days	20	22
41. G. L. R.	18	17
After 86 days	21	20
42. W. T. S.	23	17
After 52 days	16	18
43. C. M. S.	22	25
After 69 days	16	20
44. J. F. S.	24	21
After 88 days	13	15
45. W. W. T.	11	10
After 52 days	12	8
46. J. H. T.	25	24
After 69 days	22	19
47. I. B. T.	10	19
After 78 days	10	19
48. V. F. V.	17	19
After 85 days	13	15
49. A. K. W.	20	22
After 51 days	17	18
50. C. H. W.	17	15
After 67 days	0	7

Summary

Total days	3,383
Number of aviators	50
Average Number	67.6
Least Number of days	46
Greatest number of days	88

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Nystagmus	
Normal in both examinations	26
Normal first, abnormal second	13
Abnormal first, normal second	2
Abnormal both examinations.	9
Abnormal in one or both	24

From this table it will be seen that at the first examination thirty-nine of the fifty had normal reactions, eleven abnormal reactions, if we consider twenty-six seconds as the average duration of nystagmus in normal individuals and sixteen seconds and thirty-two seconds the lower and upper limits of normal nystagmus time. At the second examination twenty-eight were normal and twenty-two abnormal, thirteen aviators dropping into the abnormal class after flying, and nine giving abnormal reactions in both examinations. The abnormal reaction in all but one instance consisted of a nystagmus time of less than sixteen seconds. In 56 per cent. of the men, nystagmus time was very positively and definitely decreased following a period of flying. In The Journal, May 25, 1918, Lewis and Pike deny the actuality of the decrease in nystagmus time after numerous flights. They refer to mumps and syphilis as the probable causes in any cases coming to our knowledge in which nystagmus time has been diminished. We have been unable to substantiate either disease as the cause in any of the cases reported.

We are further informed by Assistant Surgeon Brown in his paper read before the Medical Society at Pensacola that in an examination of 250 qualified aviators, while their falling tests were normal in all instances, in 66 per cent. of the cases an abnormal past-pointing test was obtained. In an examination of 402 men who have qualified as fliers or are likely to qualify in the near future, Dr. Brown found but ninety-seven men with normal Bárány reactions.

Much the same sort of results are obtained in examining individuals whom we know have excellent senses of balance and equilibrium, such as whirling dancers and trapeze performers. This fact is also denied by Lewis and Pike in their article referred to above. We have examined only a very small number of these individuals, six in all, but in all of the six cases obtained abnormal reactions. They are given in Table 2.

TABLE 2.

	Nystagmus		Past-Pointing				Falling	
			To R.		To L.			
	R-LN	L-RN	RA	LA	RA	LA	R.	L.
E. H., whirling dancer	18	17	6	1	1	1	None	None
Mrs. E. H., whirling dancer	12	13	1	1	1	1	None	None
C. M., circus trapeze performer	19	19	3	2	1	2	None	None
E. S., circus trapeze performer	19	21	1	1	1	1	To right	To left
F. M., circus trapeze performer	12	17	2	1	1	2	None	None
O. J. S., circus trapeze performer	38	10	1	1	1	1	None	None

It is interesting to note that in five of these individuals there was no falling after whirling, in five the past-pointing was markedly abnormal, and in three, the nystagmus times were below normal, in two normal, although both below twenty-six seconds, and in one "mixed," that is, left nystagmus above normal and right nystagmus below.

We believe, therefore, that not only are we justified in our conclusion that abnormal Bárány reactions do not indicate inability to fly, but also that there is no correlation whatever between equilibrium tests as established in the Bárány chair and actual flying ability, and that flying and other practices requiring an acute sense of balance, if indulged in over a considerable period of time, have a very definite effect on the Bárány reactions. To what this effect is due, we are unable to say.

Prof. Raymond Dodge of Wesleyan University, who has for the past year been doing elaborate experimental work along these lines, says:

"The grounds of my scientific conviction that the nystagmus test does not indicate fitness to fly are both practical and theoretical. It seems incomprehensible to a psychologist that these fallacious sensory data, which are really worse than useless to a flier, should have been selected as a test of his ability to fly. It almost seems like a joke of the enemy physiologists to hinder our air service. I believe that it should be abolished as a test, since, while the results are scientifically interesting, they have no practical value in indicating fitness to fly."

Robert P. Parsons, M.D.,
Louis H. Segar, M.D.,
Cambridge, Mass.

"PROTECTION AGAINST LICE"

To the Editor:—Objection from an influential source—medical, military and editorial—has been made to the use of fats for the inunction of troops in the trenches as a protection against body lice, as suggested by me in The Journal, May 11, 1918, p. 1395, and space therefore is asked for reply.

The proposal is held to be unworkable if applied to immense bodies of men as there are required, say, 50 tons of grease for an army of a million men; but this objection hardly meets the point made in my former note.

It is assumed that troops on leaving training camps, etc., are free from external parasites. The infectious peril from lice lurks at the front wherever fatalities or casualties with severe shock among infested men occur, be they friend or foe. If a body of relieving troops should be thoroughly anointed just before quitting camp, and this performance repeated at the front as opportunity offered, the extremities especially being treated, it could be said with reasonable confidence—taking no account whatever of the two forms of *dangerous infection* for which such lice are responsible—that relief of the American soldier from the moral repugnance, the physical nuisance and the nagging caused by these pests would add perhaps 10 per cent. to his effective fighting power. Such anointing would also tend to reduce the ill effects of exposure to cold and wet in the trenches, would conserve body heat, and otherwise would strengthen resistance.

The use of fats and oils by natives of both arctic and tropical regions seems natural and instinctive, the aim in part being defense against parasitic vermin, together with conservation of body heat in the cold regions, and the tempering of atmospheric heat in the tropics.

In a paper by me, read at the Third Pan-American Medical Congress in 1901, discussing insect parasites and their agency in the spread of disease, the following sentence occurs: "The prompt decamping of lice from the bodies of the dying or dead is a fact well known to those familiar with the personnel of numbers of those unfortunates who seek or are brought to large public hospitals, and that such mobile parasites may not carry with them . . . the active elements of recognized infections would seem impossible when the capacity of other parasites is considered in this connection." The assumed fact of general knowledge among physicians of the migratory range of body lice seems to have been overstated in the foregoing quotation; for, to many medical men, it appears to be a novel proposition.

I am indebted to Major Garrison, of the Army Medical Museum and Library, for a reference that bears somewhat on the point mentioned. It is found in the poem, "The Death of Philip II," by Paul Verlaine. The pertinent lines, as translated, read:

A gaunt old man, on the bed stretched supine,

. . . .

His throat sends forth a shrill and hollow wail,

. . . .

And his foul lips a fearful stench exhale.
In his beard, as with blighted amaranth tinged,
Through his white hair, streaked with ruddier glow,
Beneath his yellowing lawn, with rich lace fringed,
Quick, cruel, hungry, swarming to and fro
To suck their sallow victim's blood unclean
The lice, in serried squadrons come and go.
This is the King, writhing in pangs obscene.

. . . .

And from a thousand holes sprung in a trice
Like clammy serpents from their foul abode,
On the cold corpse worms mingled with the lice.
King Philip was . . .

Realistic as is this rendering, it is said that it lacks something of the morbid Frenchman's biting flair. The poet naturally missed the point that the vermin were in exodus—deserting the sinking human bark—but the sources of his information no doubt were also ignorant of this fact. The worms mentioned presumably were maggots escaping from fly-blown, gangrenous ulcers. Rats having plague pneumonia come out of their holes to die, bearing infected fleas which soon decamp to other hosts; and such an appearance of rats unfailingly foreruns pandemic plague—bubonic or pneumonic—among oriental peoples.

It would be a fair test of the value of the suggestion made as to lice if two companies or battalions of the same regiment, doing similar duty in camp and trench, were selected—one to use the inunction method, the other to take chances as they come. A month's experience of thorough application in trench conditions would probably demonstrate whatever value fat may have in preventive hygiene; and, if found effective, such personal use by the soldier of this means should become as obligatory as is the proper care of his weapons and equipment.

George Homan, M.D., St. Louis.

[Comment.—Any result produced by fats will no doubt be obtained equally well with the cheap and abundant liquid petrolatum.—Ed.]

SCHOOLS OF PHYSICAL EDUCATION FOR RECONSTRUCTION AIDES AND THE MEDICAL PROFESSION

To the Editor:—The tendency in medicine is toward more activities for prophylaxis and hygiene. When one talks to members of the exemption boards he finds that they believe many of the rejections for heart disease and frequently for tuberculosis would have been avoided if the men had received proper hygienic attention, particularly of the mouth, in childhood. Hygiene, however, concerns not only the mouth, but also the whole body and is an important feature in the physical education of children. The war has brought to our attention more strongly the importance of good physical development of the men of draft age. We cannot have strong young men, however, unless they are properly developed during childhood and youth. The serious consideration of this question is of such national importance, and concerns the work of the medical profession so closely, that the American Medical Association should assert itself in its solution.

There is no doubt that, in certain portions of the country, particularly in the East, some members of the profession take an active interest in this question; but the whole country, the whole profession, needs to be aroused.

The legislators of certain states (New York, New Jersey and California) have realized the importance of the matter by passing laws to the effect that all children during their school age must have a certain amount of physical exercise during the day as a counterbalance against the effect of the confinement in the schoolroom. Recognizing the importance of exercise for children, one naturally asks, Who will conduct this part of their education? How are we to get good gymnasium teachers? Have we proper normal schools for the training of teachers and playground directors? Perhaps few physicians are aware that there are today more than twenty schools of physical education with more than 3,000 pupils in this country. As several of their studies are medical in character, it would be proper that the American Medical Association give more attention to their work, assuring for instance, that their standards are high, and that their graduates will do scientific and hygienic work.

In this connection there is an important question that demands immediate solution with reference to the war. When the reconstruction hospitals begin their activities, massage and reeducative exercises will be an important feature in their work. Where will we get operators to fill these places? The Surgeon-General's Office, no doubt, feels that all the nurses we have will be needed for other work, and has thought that the normal schools of physical education could help provide what they call "orthopedic aides" and has advised some of them to give suitable courses.

[Comment.—The Surgeon-General has announced regulations for the examination of applicants for these positions, who must be graduates of training schools for nurses and furnish one letter of recommendation from an orthopedic surgeon and another from the principal of a school who knows the applicant personally. The Surgeon-General refers women who wish to take this training to the following certified schools: American School of Physical Education, 44 Botolph Street, Boston; Boston School of Physical Education, 105 South Huntington Avenue, Boston; Posse Normal School of Gymnastics, 779 Beacon Street, Boston; New Haven Normal School of Gymnastics, 1446 Chapel Street, New Haven, Conn.; Normal School of Physical Education, Battle Creek, Mich., and Reed College, Portland, Ore. The course of training comprises instruction in anatomy, physiology, personal hygiene, the theory of massage and remedial exercises, theory of bandaging, and practice in the last three subjects.—Ed.]

These aides to the surgeons in the reconstruction hospitals might be made really useful if their training was made as practical as possible. They ought to know the large features of kinesiology, the normal movements in the various joints, and the normal action of the various muscles so as to be able to apply their activities in massage and exercises in a fairly intelligent manner. While these things can be learned in a fashion on a skeleton and from books and lectures, it would be much better for them if they had had an opportunity to see and work on actual patients. If the profession took up this question through the medical schools and hospitals, working in conjunction with the existing normal schools of physical education in the large cities, we should at least be able to develop this class of help for the restoration of injured soldiers better than has been done in Canada.

The whole subject naturally requires serious consideration and a good deal of active cooperation between elements that are perhaps more or less strange to each other now; but such cooperation ought easily to come within the range of possibilities. When the "aides" are once at work, a certain amount of time should be arranged for their future instruction by means of lectures from members of the hospital staff, who will explain the important features of operations made on patients they are treating and what the aim and possibilities are for the work that they are to perform.

Hugo Ad. Oldenborg, Chicago.

CARELESS METHODS IN FITTING ARTIFICIAL EYES

To the Editor:—It may not have occurred to the readers of The Journal, as it had not to me until recently, how insanitary are the methods employed by the dealers in artificial eyes. Many surgeons in order to avoid the commercial element of selling something to a patient have been in the habit of referring those requiring ocular prostheses to opticians who keep artificial eyes in large quantities. This has seemed the more reasonable, moreover, because almost invariably after the first eye is fitted our patients go directly to these dealers to have them replaced.

In a case recently referred to one of the best of these, an acute purulent conjunctivitis was developed within twenty-four hours. An examination of the discharge revealed the presence of streptococci, staphylococci and pus cells. While the condition was rapidly controlled, it emphasized the careless methods employed. The shells, having been tried in many eyes, are frequently returned to the case without even being washed, to say nothing of being cleansed in a sterilizing solution. They are then indiscriminately placed in the orbit. When one recalls the numerous conditions for which eyes are removed, including syphilis and gonorrhea, it is apparent that our boards of health should institute protective measures requiring the thorough cleansing in a sterilizing solution of each artificial eye before it is inserted in the orbit. It is rather remarkable that more frequent infections have not been reported.

F. Park Lewis, Buffalo.

NEED OF CAMPAIGN TO AROUSE INTEREST IN TRAINED NURSING

To the Editor:—An editorial in The Journal (June 8, 1918, p. 1768) under the title, "Nurses Needed by the Red Cross," calls attention to the campaign now under way for the enrolment of 25,000 nurses for the Army and Navy, in addition to those already in service, between 10,000 and 12,000.

In this locality the earlier responses have been prompt and the enrolment so heavy that it is difficult to see where our proportion is to come from. Hospital service has been seriously impaired, and there are but few nurses available for work in private homes. The "practical" nurse to whom the editor refers has been so displaced in recent years by the trained nurse that she cannot be counted on for much help in the present emergency.

A most serious aspect of the situation is the shortage of pupil nurses in the training schools. Young women are going to work in greater numbers than ever before, and are entering lines that have heretofore been closed to them; but now, when the demand for their services is greatest, there is a most deplorable lack of pupil nurses in the training schools.

To arouse interest in trained nursing among the qualified young women throughout the country, would it not be practical for the Red Cross to put on a campaign, nation wide in its scope, to stir up interest in trained nursing as a profession?

Such a campaign would direct the minds of many young women to this great need, and the depleted ranks of the training schools would be filled, to the end that, when future demands are made for nurses, a supply would be available.

J. M. Mason, M.D., Birmingham, Ala.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DICHLORAMIN-T

To the Editor:—I am interested in the use of Dakin's dichloramin-T solution in ocular infections as considered in the article by Drs. A. S. and L. D. Green (The Journal, April 27, 1918, p. 1212). Will you kindly inform me how to make the solution correctly? 1. What kind of oil must be used—plain or modified? 2. Does not the substance sold by druggists as dichloramin-T change in its composition? 3. Is it weighed or measured? 4. Does it last a long time if well preserved?

C. Viesca y Lobaton, M.D., San Antonio, Texas.

Answer.—1. See The Journal, June 8, 1918, p. 1788.

2. Dichloramin-T is stable when protected from moisture and light.

3. The term "per cent." is commonly used to signify per cent. by weight, though in the United States it is sometimes used with the intention that solids be weighed and liquids measured. In the present case it would make little difference whether both the dichloramin-T and the solvent were weighed or the first weighed and the second measured.

4. No; solutions should be as freshly made as possible.

"THE HONOR ROLL"

To the Editor:—I note the "Military Medical Honor Roll" in The Journal of June 1, and it is very commendable. It does seem, however, as though those of us who responded to the call for medical men for the Army and Navy, offered our services and were refused on account of physical disability, should have some suitable recognition, also. As it is now, we are classed among the goats.

V. A. C., M.D., Milwaukee.

To the Editor:—In looking over your "Honor Roll" in the current issue it appears to me that you do an injustice to the men who have volunteered and been discharged since you do not include their names. Turn to Wilkin County, Minn.: I was the first one to accept a commission. I was discharged in order to have a complete mastoid operation performed followed by a complete ophthalmoplegia with divergent strabismus. There are many more like myself, and I think we deserve some notice. Please omit my name.

X. Y. Z.

To the Editor:—In the issue of The Journal for June 1, 1918, you publish a list of physicians who have volunteered or have gone into service in the Army or Navy. What about the men over draft age who have volunteered and have been honorably discharged on account of physical disability, which is always stated to have existed prior to entering service? I am one of that class, and was discharged, Feb. 5, 1918. I was reexamined, May 24, 1918, at Camp Pike, Ark., and am now waiting for a report from the Surgeon-General. It was through no fault of mine—the spirit was all right, but the flesh was weak.

A. E. Harris, M.D., Little Rock, Ark.

Answer.—As was announced in The Journal, the "Honor Roll" was limited entirely to those who hold commissions. The primary object in publishing it was to show whether or not each county, district, state, etc., has furnished its quota.

For this reason it does not include the names of those who have volunteered but who, for one reason or another, did not hold a commission at the time our statistics were closed. For example: A county has 100 physicians. Twenty per cent.—that is, twenty physicians—volunteered. Five of the twenty were rejected or discharged for physical or other causes. This county, therefore, at the time of the publication of the Honor Roll still had to furnish five physicians for the M. R. C. in order to meet its quota. The fact that five had volunteered is immaterial; that particular county was still five short of its quota. As stated in the introduction to the Survey, a supplementary survey is in preparation for the use of the county and state societies. This, in addition to indicating those who have accepted commissions, will also give the names of those who have applied for commissions and whose applications are pending and those who have been rejected or discharged.

COTARNIN HYDROCHLORID

To the Editor:—The description of the actions and uses of cotarnin, as given in New and Nonofficial Remedies, was quoted in The Journal, May 11, 1918, p. 1396, in answer to a query. This description tentatively accepts certain current statements, in the absence of definite published data. I have now done some work with the object of supplying this evidence:

In a recent publication of mine (*Jour. Pharmacol. and Exper. Therap.*, 1918, **10**, 523) on this subject it was shown that perfusion of both uterine (guinea-pig) and frog's vessels (hind extremities) caused relaxation. When the drug was injected around the vessels of the rabbit's ears no change in the vascularity of the organ was noted. Direct application of cotarnin in solution and powder form to different kinds of superficial wounds invariably increased the bleeding. These effects have been confirmed recently by a quantitative method for estimating local bleeding.

Under the same conditions, epinephrin invariably produced vasoconstriction, and diminished or arrested local bleeding.

From this and other evidences in the literature it can be safely stated that cotarnin is entirely worthless as a local hemostatic. Its pharmacologic actions, and, hence, its hemostatic inactivity, are in harmony with its close chemical relation to the isoquinolin group of opium constituents, such as narcotin, from which it is derived.

Paul J. Hanzlik, M.D., Cleveland.

INSTRUCTION BOOKS FOR MEDICAL OFFICERS—TRAINING CAMPS

To the Editor:—I would appreciate information in regard to the following: 1. The names of books used for instruction of medical officers; where they can be obtained and the price. 2. Are there any other medical training camps besides Fort Riley and Fort Oglethorpe?

William E. Cody, M.D., Merrill, Iowa.

Answer.—1.

Manual for the Medical Department, 1916, Superintendent of Documents, *Government Printing Office*, Washington, D. C., 60 cents.
Field Service Regulations, 1914, ibid., 60 cents.
Army Regulations, 1913, ibid., 60 cents.
Drill Regulations and Service Manual for Sanitary Troops, 1914, ibid., 50 cents.
Straub: Medical Service in Campaign, P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia, $1.50.
Havard: Military Hygiene, William Wood & Co., 51 Fifth Avenue, New York, $5.
Ashburn: Military Hygiene, Houghton, Mifflin Company, Cambridge, Mass., $1.50.
Ford: Medical Military Administration, P. Blakiston's Son & Co., Philadelphia, $5.

2. No.

ELIGIBILITY FOR SERVICE IN THE MEDICAL RESERVE CORPS

To the Editor:—Kindly inform me whether I am eligible for a commission in the Medical Reserve Corps of the United States Army. I was born in Hungary and came to this country eleven years ago. I am a citizen of the United States; received my naturalization papers in the year 1915; received my medical education in this country in a well recognized medical college. Please omit my name and address.

X. Y. Z.

Answer.—Physicians born in enemy countries are not eligible for commission in the Medical Reserve Corps.

WHEN TO WEAR UNIFORMS

To the Editor:—Is an officer who has been commissioned in the Officers' Reserve Corps of the United States Army permitted to wear his uniform before actually receiving word to report for active duty?

V. Everit Macy, M.D., East View, N. Y.

Answer.—Reserve Corps officers should not wear uniforms until ordered on active duty.

SERVICE AT BASE HOSPITALS

To the Editor:—I am classifying the diseases that have been noted in this hospital since its inception, and am interested to know what makes up the medical service in the war zone in the hope of making a comparison and study for our men who are in the base hospital here preparing for overseas duty. I shall be interested in any literature you may be able to furnish on the commoner diseases with which a base hospital overseas has to deal.

Willard C. Stoner, Major, M. R. C., Base Hospital No. 52,
Camp Gordon, Ga.

Answer.—The following articles on the work in a military hospital may aid you:

Summons, W.: Medical Work Seen in Australian Military Hospitals, *Med. Jour. Australia*, Sept. 22, 1917.
Mandel, Milton: Medical Impressions in a Base Hospital, The Journal A. M. A., Aug. 25, 1917, p. 637.
Hinds, R. W.: Medico-Military Notes, *Mil. Surgeon*, 1918, **42**, 25, 169.
Smith, L. L.: Diseases of War, Their Prevention, Control and Treatment, and Handling of Infectious Diseases in the Field, *California State Jour. Med.*, December, 1917.
Finley, F. G.: Medical Work at a Base Hospital in France, *Canad. Med. Assn. Jour.*, 1916, **6**, 692.
Thomas, J. J.: Neurological Cases Seen at a Base Hospital, *Jour. Nerv. and Ment. Dis.*, 1916, **44**, 495.

Book Notices

Ambulance de "L'Océan" la Panne. Travaux publiés sous la Direction du Dr. A. Depage. Secrétaires de la Rédaction: Dr. A.-P. Dustin et Dr. G. Debaisieux. Paper. Volume 1, numbers 1 and 2. Price, annual subscription, 30 francs. Paris: Masson et Cie, 1917.

This publication comprises a description of the foundation, the evolution and the organization of the hospital at la Panne. The hospital was hastily constructed on the seashore in the last remaining corner of Belgium after that country had been devastated by the Germans. The method of construction, the internal arrangement, and the subdivisions of the medical service are described in detail, including a description of the American Pavilion and of the Institute Marie Depage. All will remember the visit to this country of Mme. Depage, her efforts to raise funds for this hospital, and her tragic death at sea on her return trip. It is interesting to learn the purpose to which the funds raised here were put, and to know the great good which this hospital is accomplishing in the present crisis.

Following the description of the hospital in general are several chapters devoted to surgical subjects connected with the war, such as general considerations of the treatment of war wounds; secondary suture of war wounds treated by the Carrel method; intravenous injections of peptone in septicemias of traumatic origin and in grave infections; researches on blood pressure in gas intoxications; the prophylactic treatment of tetanus, and a number of other interesting subjects. These are all by members of the hospital staff, and indicate the high class of work that is being done in the institution.

Progressive Methods of Handling the Insane.—At the conference of civic organizers held at the Cincinnati Academy of Medicine, March 18, resolutions were adopted calling on the governor and the state board of administration to establish an institute of psychiatric research. It is asked that this institute be empowered to appoint directors who shall be of recognized authority in psychiatry and neurology, who shall supervise all institutions for the care of insane, criminal and epileptic, and who shall be empowered to devise a program from the improvement of the medical and scientific achievement of the wards of the state; to establish uniform methods and improve systems of care-taking and study; to establish clinical conferences both at the central laboratory and at the various state institutions; to conduct a central laboratory for the examination of pathologic material submitted by the physicians in the several state institutions; to take steps to bring the family physician in close touch with the progress and treatment of his patients in the state hospitals; to inquire into the state's facilities for establishing a visiting staff of specialists to supplement the work of the resident hospital staffs; to encourage work in psychiatry, and allied works in the state institutions; and to institute methods of encouraging therapeutic enthusiasm, and breadth of the social point of view in the members of the staffs of the various institutions.

Medicolegal

Right to Recover Money Extorted to Protect Reputation

(Bertschinger v. Campbell (Wash.), 168 Pac. R. 977)

The Supreme Court of Washington reverses a judgment of dismissal and remands for a new trial this case, wherein the plaintiff sought to recover $1,025 alleged to have been unlawfully extorted from him by the defendant, and $125 as special damages incidental thereto. The court says that both parties were physicians, the plaintiff having lived thirty-three years in the city, where he practiced his profession and had built up a good practice. In December, 1912, a young man and a young woman called at his office and requested him to examine her with a view of determining certainly whether or not she was pregnant, they believing that she was then probably in that condition. The plaintiff was given to understand that, should he find the young woman pregnant, they desired that he perform an abortion on her. He consented to examine the young woman, but positively refused to perform any abortion on her. His examination convinced him that she was pregnant, and he so advised them. He then charged her $5 for making the examination. No abortion was performed on her by the plaintiff, and nothing further was ever done by him for her. But eleven days after the visit the plaintiff received from the defendant this letter:

> "Dear Dr.: A young lady lays dying from septic condition and incomplete abortion. She has made a full confession, you are charged with the crime. The confession is in my possession. In event of her death it will be turned over to the police. Confession is witnessed. I do not think she can last more than a day or so, judging by her present condition. I am very truly," etc.

The plaintiff immediately talked the matter over with his wife, then called up the defendant on the telephone, and went twice to see him, the latter time accompanied by his wife, who carried the money, which had been specially procured, to pay the defendant. After the defendant had the money, he patted the plaintiff and his wife on the back and said the danger was all over; the girl wasn't in a very serious condition at all; he thought everything would come out right, and in the event of her death he would protect them.

The trial court, on the defendant's motion, at the close of the plaintiff's evidence, dismissed the case on the ground that the evidence introduced in the plaintiff's behalf was not sufficient to support any recovery against the defendant, in that it conclusively showed that he voluntarily paid the money to the defendant, or on the theory that it must be determined, as a matter of law, from the facts shown in the case, that the plaintiff could not recover because the money was not paid under such legal duress as the law requires to be proved to avoid a contract, in that the plaintiff was not charged with the commission of a crime in any proceeding instituted in court, nor was he threatened with immediate arrest or imprisonment. But the supreme court does not agree with that view. Nor does it think it likely that, on a new trial, the defendant would care to invoke the defense, suggested in oral argument, that the payment of this money, under the circumstances shown by the plaintiff's evidence, was, in effect, the compounding of a felony, and that the agreement was so tainted with wrong and illegality that the courts would not lend their aid to the enforcement of the right claimed by the plaintiff, since that would imply that the defendant was himself equally guilty of compounding the crime with which he charged the plaintiff, and would seem to be an admission on his part that the money was received, as well as paid, for that purpose. But even that theory would still leave open the question of the plaintiff's having paid the money under duress; and clearly it would have been erroneous for the trial court to have dismissed the action on the ground that the payment of the money was for the compounding of a felony, in view of the evidence produced in the plaintiff's behalf. If the contract or settlement was void because of duress, it was not a binding one under which the defendant could retain the fruits thereof, even though it was also a contract which, but for the duress, would have been against public policy and as such could not be the foundation of any right to be asserted in the courts.

Itemizing of Account and Application of Payments

(Duffy v. Kilroe (Miss.), 76 So. R. 681)

The Supreme Court of Mississippi, Division A, in rendering a decree in favor of plaintiff Kilroe for the amount for which he sued defendant Duffy, administrator, for professional medical services rendered to a Mrs. Botto, holds that the plaintiff's account was sufficiently itemized, and that, properly applying in the payments which had been made on it, no part of it was barred by the three-year statute of limitation of Mississippi. The court says that Mrs. Botto was a woman of wealth whose home was in Mississippi, but who spent several of the latter years of her life in the city of New York, during which time she was suffering from a disease because of which she demanded and received the daily professional services of the plaintiff. The services rendered by him continued over a period of several years, and Mrs. Botto would make him payments thereon at intervals, which payments were credited by him on his books to Mrs. Botto generally, neither she nor he applying them to any particular items of the account due him by her. Mrs. Botto died, May 15, 1914. On the 19th of that month the defendant was appointed administrator of her estate. Jan. 16, 1915, the plaintiff's account for the professional services rendered by him to Mrs. Botto was duly probated, registered and allowed; but the administrator declined to pay it, and this suit was instituted, June 16, 1915. The lower court erroneously held that the plaintiff was entitled to recover only about half of the sum sued for, on the ground that the remainder was barred by the three-year statute of limitation. The account probated was of this form:

	Mrs. Frances M. Botto to Dr. Edward P. Kilroe, Dr.		
	To professional medical services rendered to said Frances M. Botto by Dr. Edward P. Kilroe at her special instance and request		$31,684.00
	Credits		20,085.00
	Balance due		$11,599.00
	Itemized Statement of Account.		
1908.	Day Visits, $5.00. Night Visits,		$10.00
April	63 visits at $ 5.00	$315.00	
	4 visits at $10.00	40.00	
			$355.00

The account was not filed with the chancery clerk at the time the bill of complaint was, but during the progress of the trial it was filed with and so indorsed by him. On objection being made that the account had not been made an exhibit to the bill, the court below permitted an amendment to be made thereto. Conceding, for the sake of the argument, that a copy of the account sued on should have been filed with and as an exhibit to the bill, there was no error in allowing the bill to be so amended as to refer to the account which was then on file, as exhibit thereto.

The objection was made that the account was not sufficiently itemized to comply with Section 2106, Code of 1906, Hemmingway's Code, Section 1774, as the dates of the plaintiff's visits to Mrs. Botto were not set forth. It was not necessary for the account to be so minutely itemized in order for the plaintiff to recover, but because of his failure to so itemize it, construing, as the court must, the account most strongly against him, the due date of each item thereof must be held to be the first day of the month in which it was charged, and the statute of limitation applied accordingly.

The payments made to the plaintiff by Mrs. Botto should have been applied to the oldest items of the account, and had this been done the plaintiff would have been entitled to a decree for the full amount claimed by him; for, under the facts presented, the statute of limitation ceased to run against the account at, and did not again commence so to do after, Mrs. Botto's death, and the payments made by her covered all of the plaintiff's charges for services rendered three or more years prior thereto. Under Section 3113, Code of 1906 (Hemmingway's Code, Section 2477), a debt not barred by limitation at the death of the debtor remains alive, in any event, for at least one year after the death of the debtor. If probated and registered within such year, the general statutes of limitation do not afterward run against it.

Society Proceedings

COMING MEETINGS

American Ophthalmological Society, New London, Conn., July 9-10.
Idaho State Medical Association, Seattle, July 17-19.
Massachusetts Medical Society, Boston, June 18-19.
Montana Medical Association, Butte, July 10-11.
New Jersey Medical Society, Spring Lake, June 25-26.
North Dakota State Medical Association, Fargo, June 19-20.
Oregon State Medical Association, Portland, June 27-29.
Southern Minnesota Medical Association, Winona, Minn., June 24-25
Washington State Medical Association, July 10.
Western Roentgen Society, Colorado Springs, June 27-28.

THE AMERICAN GYNECOLOGICAL SOCIETY

Forty-Third Annual Meeting, held at Philadelphia, May 16-18, 1918

The President, Dr. John G. Clark, Philadelphia, in the Chair

Medical Teaching and Research After the War

Dr. John G. Clark, Philadelphia: An adequate endowment or an annual budget of not less than $25,000 a year for salaries would render it feasible to combine the departments of obstetrics and gynecology. Some of the advantages of this plan are: (*a*) There will be less duplication of teaching in embryology and in the anatomy and physiology of the female reproductive organs. (*b*) The pathologic aspects of the two subjects could be correlated, making only one laboratory necessary. (*c*) As many of the diseases are referable to the child-bearing process, they may well be grouped under one head. (*d*) The opportunity is afforded of studying, in the obstetric department, the results of various operations and the remedial measures employed for the relief of gynecologic diseases.

When an endowment is not sufficiently large to equip fully and maintain a combined department in the most comprehensive way, or when special endowments for the maintenance of an obstetric and gynecologic department can be secured but are not large enough to allow the chief assistants and director to retire from private practice, such departments may be conducted more successfully as separate units, for the following reasons: (*a*) In a university medical school, special departments are likely to turn out a more refined product and to offer better instruction if the field to be covered is not too extensive. (*b*) When properly endowed, the department of gynecology may expand and enter the domain of general surgery. The chief function of the head of such a department is that of instructor in diseases of women and, in a minor rôle, of clinical teacher of abdominal surgery. (*c*) With separate chairs, more time can be given in the obstetric department to the teaching of the very important subject of diseases of nursing infants, a subject that is now receiving inadequate attention for the reason that the obstetrician has not time to devote to this branch.

Escape of Foreign Material from the Uterine Cavity into the Uterine Veins

Dr. John A. Sampson, Albany, N. Y.: A study of uteri in which the venous system has been injected with bismuth through the uterine and ovarian veins shows a rich venous plexus in the endometrium and also one in the myometrium, consisting of a peripheral and radial plexus. Arcuate veins between the two zones convey the venous blood to the uterine plexus between the layers of the broad ligament. Relatively large sinuses (receiving) radiate from the base of the endometrium into the myometrium, and convey the blood from the endometrial plexus into the deeper portion of the radial. If these receiving sinuses are exposed by removing the overlying endometrium, and the uterus is relaxed, thus holding the lumina of the receiving sinuses open, fluid and small solid material could easily escape from the uterine cavity into them and thence into the venous circulation outside the uterus. I believe that uterine contraction following relaxation, when there is obstruction in the cervical canal, and intra-uterine irrigation, may bring about increased pressure and force fluid, sterile or containing bacteria in suspension or placental cells, into the venous circulation, and that this is one way, and probably a frequent one, by which puerperal infection arises and placental cells reach the lungs.

DISCUSSION

Dr. George W. Kosmak, New York: The work of Dr. Sampson is a striking demonstration that we ought to stay out of the uterus as much as possible, because the invasion of this organ, particularly in the puerperal state and at other times, is attended with a great deal of danger. Observations that I made some years ago with reference to the extrusion of irrigating fluid through the fallopian tubes demonstrated this to me in a dramatic manner.

Dr. John O. Polak, Brooklyn: The demonstration of the protection of the endometrium against invasion from curetting the uterus is particularly impressive. Years ago we were taught not to operate during the menstrual period; yet, in the hurry of hospital work, we have violated that rule. Dr. Sampson has given us a clear idea of why in some cases we get infection.

Dr. Thomas J. Watkins, Chicago: This paper is of great value in bringing before us positive evidence against curettage of the puerperal uterus, and this society should put itself on record against any such procedure. It is surprising and shocking that many men continue to curet and wash out the puerperal uterus. Dr. Sampson has presented an excellent argument against it. He emphasizes the danger of increasing infection by curettage, and especially increasing the dangers of doing hysterectomy a few days after the preliminary curettage.

Dr. J. Wesley Bovée, Washington, D. C.: The work of Dr. Sampson confirms what I have been doing in the last few years, namely, discarding frequent curettage, but, still clinging to the necessity of having to invade the uterine cavity, injecting iodin into it. In two specimens in which I injected iodin previous to removing the body of the uterus within ten days for gonorrheal infection, I found iodin in the blood channels in the uterine body, so that caused me to discard injections of iodin.

Effect of Hysterectomy on Ovarian Function

Dr. Edward H. Richardson, Baltimore: The uterus is not essential to a continuation of ovarian fuction, except as regards menstruation and reproduction. The disturbances of ovarian function attributed to hysterectomy are partly those associated with normal menstruation and partly those arising from damage to the ovary through operative trauma or disease. The weight of evidence furnished by anatomic, experimental and clinical investigations is overwhelmingly in favor of retention of sound ovaries both before and after the menopause age.

DISCUSSION

Dr. Howard A. Kelly, Baltimore: It is best to conserve the ovaries or as much of healthy structures as may be retained in women who are under 40. In women of 40 or 42 it is best not to be so conservative. In the past we have decidedly overdone conservatism. If we can conserve either ovary and a portion of the uterus and keep up menstruation, if only for a year or two, it is a great advantage.

Dr. Walter W. Chipman, Montreal: Every effort should be made to care for the circulation of the ovary that is left behind. I plead guilty of not in the past having been sufficiently careful in this respect. I certainly am conservative in the matter of the ovary. If we can tell a woman after an operation that her sexual organs are preserved, it is a great psychologic comfort to her. It goes without saying that when the ovaries are diseased they should be removed. I have given up the resection of diseased ovaries.

Dr. Henry T. Byford, Chicago: It is important not to pay so much attention to the symptoms of the menopause. It is well not to enumerate these symptoms to patients, but to give them ovarian substance or extract; when they know they are getting it, the psychologic condition will be kept up, which is so necessary in these cases, and there will be less operating. With a little treatment and good advice, I do not think we shall have to do quite so much surgery.

(*To be continued*)

ASSOCIATION OF AMERICAN PHYSICIANS

Thirty-Third Annual Meeting, Held at Atlantic City, N. J., May 7-8, 1918

(Concluded from page 1791)

Bacteria of the Intestinal Tract

Dr. W. W. Ford, Baltimore: The gram-positive bacteria found in dejecta were found to be aerobic forms due to ingestion of milk, water, etc., and occurred in foods on which children are usually nourished. Gram-positive spore-bearing bacteria were normal to the intestinal tract. Anaerobic cultures were always negative. No encapsulated forms were present above the ileocecal valve. Below this valve there were present encapsulated gram-positive organisms of the morphology of the gas bacillus. In Baltimore milk there were present spore-forming gas bacilli. In the neutralized whey were found hemolytic substances due to bacteria. These were toxic for rabbits and guinea-pigs in subcutaneous inoculation. If the whey was filtered, the filtrate was also toxic. Milk cultures of the gas bacillus were always poisonous to animals. Work is now being done to determine whether this organism is vegetative in the intestinal tract and whether it bears any relation to the production of scurvy by the feeding of children with pasteurized milk.

DISCUSSION

Col. W. H. Welch, Baltimore: Has toxin been demonstrated in the milk, and, if so, was the carbohydrate content of the milk reduced? The reason the toxin is often overlooked is that if the carbohydrate is not changed the acid formed is destructive to the toxin. Search for the toxin must be made after the reduction of lactose.

Major Simon Flexner, New York: The factor influencing the degree of toxicity of the cultures that Dr. Ford has described is the control of the carbohydrate. There are differences at present unknown in the toxin-producing powers of the various strains of the Welch bacillus. Dr. Bull found one strain which was very superior to the others in antitoxin-producing power. In regard to milk cultures, the toxin-producing power must be determined not only in milk but also in other mediums.

Dr. W. W. Ford, Baltimore: I have tried two methods of increasing the toxicity of the milk cultures, to get milk whey in which lactose was taken away, but the gas bacillus did not multiply well in milk of that character; and to neutralize the acidity of the milk by the addition of powdered chalk. I found that the filtrate from such milk cultures was more marked in toxicity. In the study of pasteurized milk we were forced to limit observations to study of such organisms as might be obtained from this source. The gas bacillus obtained from soil and other sources would be more poisonous than that from milk. The variation of toxicity in strains was marked. It is premature as yet to attempt to answer the question as to whether pasteurized milk ever develops poisonous properties. In the majority of cases the gas bacillus exists in the intestinal tract in spore form, but observations so far do not indicate that there is any vegetation there. Probably the same thing holds good for the tetanus bacillus.

Practical Value of Diphtheria Toxin-Antitoxin Injections in Immunization after Three Years

Dr. William H. Park, New York: No death has occurred in 10,000 cases of immunization; four cases of collapse happened. Within the last six months no untoward results have been seen. Twenty per cent of children have shown a slight rise of temperature. From one to three units are given with perfect safety. In regard to the duration of immunity, it would seem as if artificial immunity in 80 per cent. of cases will be as perfect as natural immunity. Immunity has not dropped off more than 2 per cent. in two years. If it should be lost the child can be immunized again with equal effectiveness.

Studies of Chronic Myocarditis

Dr. H. A. Christian, Boston: In the recent studies of the heart by means of the electrocardiograph, there has been a tendency to emphasize the importance of the valve lesion rather than myocardial function. Most cases of myocardial insufficiency are called "mitral" insufficiency. The thickened valve is not differentiated from that with the orifice enlarged. The pathologist terms such cases myocarditis as have lesions demonstrable at necropsy, whereas the physician uses the word to mean myocardial insufficiency. Cabot some years ago found that only 22 per cent. of the diagnoses of chronic myocarditis, made during life, were correct at necropsy. My experience is that fewer mistakes are made in this diagnosis than in others. In analyzing the cases we found that there was a great frequency in incidence above 41 years. In 407 cases, 112 gave a history of rheumatism; 35 had a positive Wassermann; 110 were chronic users of alcohol; 178 had high blood pressure; one half the cases had chronic nephritis. Overeating as a factor was difficult to estimate, but 188 persons were overweight. The condition is evidently a very common one; the change is primarily in the heart muscle. The cause has not been determined. At necropsy a large percentage showed no changes in the coronary valves and no enlargement.

DISCUSSION

Dr. H. S. Plummer, Rochester, Minn.: We must consider if there is damage to the heart by overloading, either by high blood pressure or hyperthyroidism. The latter is a very common cause of myocardial insufficiency. I have recognized that one third of the cases are due to adenomas of the thyroid. These probably originated in fetal rests. These patients run a metabolism from 30 to 50 per cent. above normal, and this drops to normal with the removal of the adenoma. Blood pressure in these cases is due to increased minute volume flow through the right heart.

Dr. E. Libman, New York: One should try to find a cause for the myocardial insufficiency. If a history of rheumatism is present there may be a true myocardial lesion, but with syphilis the disease would be arterial. With diffuse atherosclerosis of the coronary system there must be muscular lesions to get myocardial insufficiency. One must see if the patient was anemic. Transfusion has often removed the cause of myocardial insufficiency. Bleeding fibromas, thyroid disease, etc., may be the underlying cause of myocardial insufficiency.

Dr. A. Stengel, Philadelphia: Myocardial insufficiency and myocarditis are two different things. In hyperthyroidism the patient is suffering from myocardial poisoning, but not necessarily from myocardial disease. The diagnosis of acute myocardial disease is exceedingly difficult to make. In the absence of evidence of valvular disease one is justified in saying myocardial disease, but many of these cases clear up when some focus of infection is removed, proving that the myocardial symptoms were but a manifestation of the toxemia.

A Study of the Empyemas at Camp Upton

Major H. Brooks, M. R. C., and Major R. L. Cecil, M. R. C.: We had a very virulent type of empyema. The cases were all associated with pneumonia. The disease was also associated with measles, but not with mumps. The causative germ was the streptococcus in 50 per cent. of cases, and in the other 50 per cent. the pneumococcus. Patients with pneumococcus empyema recovered after operative treatment. There were 49 cases of streptococcus empyema, with a mortality of 61 per cent. Of the four *Streptococcus viridans* cases, three patients died; four were mixed infections with streptococcus and pneumococcus, with no deaths. Of 35 hemolytic streptococcus cases, 22 patients died. The empyema seemed in each case to be a concomitant infection of the pleural sac. With the entrance into camp of a large contingent of colored troops the percentage of hemolytic streptococcus infections increased. With very careful isolation of cases there was found to be no diminution of occurrence. In the bronchial type of infection there was very little cough, very little sputum was raised, and very little pleuritic pain. The chief symptom throughout was prostration. The diagnosis was made by aspiration, confirmed by the roentgen-ray findings, and the changes in percussion were an important sign. The exudate in these cases had the appearance of alkaline urine and generally contained streptococci. Pericarditis usually developed early in these cases and was progressive, but there was lack of metastases elsewhere. Of 27 cases that came to necropsy, 23 were streptococcus cases. The pulmonary lesion showed interstitial bronchopneumonia, of the type described by Cole. Pneumothorax was also present. As regards treatment we found that early operations were fatal. It seems essential to wait till the pus becomes cellular in character, when operation can be performed safely.

DISCUSSION

Dr. H. A. Christian, Boston: In civil practice we had practically the same experience as has been reported in Army cases. Very frequently the streptococcus was the etiologic factor. The cases were the interstitial type of bronchopneumonia. Experience shows that fatalities occurred from too early operative interference. Some patients got well with repeated tappings of the fluid. The pneumonias had a tendency to shift in type and at first we were much disturbed with atypical forms, until we found that frequently we had to deal with the streptococcus.

Col. W. H. Welch, M. R. C., Baltimore: In civil practice streptococcus infections are most important. There existed at first a period of great confusion in regard to these cases. Investigations were then made by Drs. Zinsser and Dochez which brought out clearly that the streptococcus was the most important cause. At one camp the cases seemed to be due to the *Streptococcus viridans* and it was a question as to what had imparted to this streptococcus these unusual properties. What reasons have played a part in enhancing the virulence of the streptococcus? This is the most important problem today in dealing with infections of soldiers. In life the pulmonary lesion is frequently so mild as not to be recognized. In the infection through the respiratory tract the streptococci make way rapidly to the pleural passages, but no doubt they leave one or more small foci of the disease which can be detected on careful examination.

Major R. L. Cecil: In regard to the pneumococcus, cases were found with Type II in the sputum and Type IV in the pleural fluid. Of the streptococcus group four cases had shown nonhemolyzing streptococci. These were recognized as *S. viridans*. In the types of cases with mixed infection there was a mortality of 60 per cent. Often there were streptococci in the pleural field and pneumococci in the sputum. Empyema patients have plus cells in the fluid. Many cases showed localization between the left lung and pericardium and this probably explained the frequency of pericarditis.

Major E. P. Jocelin: Of fifty-five patients operated on, seven died. Operations were by simple drainage and no ostectomies were done. Twenty patients died without operation. In many cases several cavities were involved.

Hemosiderin Granules in Cells of the Urine: An Aid to the Diagnosis of Pernicious Anemia and Hemochromatosis

Dr. Peyton Rous, New York: In a soldier 46 years of age, with lesions of hemochromatosis, the diagnosis between this disease and syphilis was doubtful. There was enlargement of the liver and spleen and a peculiar gray pigmentation of the skin. The urine was found to contain considerable hemosiderin granules. The patient died within six months with characteristic signs of hemochromatosis. Fresh urine should be used for this test.

Thrombosis of the Coronary Artery

Dr. J. B. Herrick, Chicago: Death need not immediately follow obstruction of the coronary artery. Cases may be divided arbitrarily into four groups: (1) those with instantaneous death; (2) those in which death soon follows; (3) those in which death occurs weeks or months later; (4) a hypothetic group in which symptoms are very slight, being merely an obstruction of the twigs of the artery. The third group is important. In such cases patients frequently have had angina pectoris and they describe the occurrence of the coronary obstruction as the most acute and prolonged attack they ever had. The pain usually is referred to the epigastrium. Occasionally it simulates an acute abdominal syndrome, and careful differentiation is necessary as unnecessary operations are sometimes performed. In regard to experimental work on this subject, the ligation of the coronary artery in dogs has been done and the electrocardiogram studied. Dogs can live weeks and months after the ligation and may finally recover. In the experimental ligations the lesions were produced in the myocardium. They were most marked in the endocardial or subendocardial locality, or conductive region of the heart. Such phenomena as auricular or ventricular fibrillation were produced with changes in the electrocardiogram in the T-wave.

DISCUSSION

Dr. George Dock, St. Louis: I had a patient, a man, aged 61, who had never had occasion to consult a doctor for any illness and had been doing active work for forty years. He was a big eater but took little exercise. He was apparently vigorous, but medical men would look on him as arteriosclerotic. He denied syphilis and had no scar, but the Wassermann was + + + +, and it was found that he had a marked arteriosclerosis. After a Christmas dinner he was returning to his house and while climbing a small hill he felt a very severe pain radiating down the left arm; he was obliged to stop. The physician who attended him said it was angina pectoris with high blood pressure, and gave him nitroglycerin. The man went to work until January 6, when he had another attack and was brought to the hospital. He had air hunger to a marked degree and the larynx worked with extreme violence. Morphin and atropin relieved his symptoms. He never got over the orthopnea. Later he developed hydrothorax. Dr. Robinson took the electrocardiogram and without knowing that a diagnosis of coronary thrombosis had been made, he stated that the absence of the T-wave would suggest coronary obstruction. The patient died of double hydrothorax twenty-three days after the first angina pectoris attack. Postmortem examination showed very marked syphilitic arteriosclerosis. There was thrombosis of the descending coronary with an infarct three weeks old.

Dr. S. J. Meltzer, New York: It should be kept in mind that human cases are not identical with experimental ligation cases. One cannot be sure that the ligation was thorough enough or permanent enough. Ligation is not the same as thrombosis. It would be well to repeat the old experiments from a new light—to occlude the coronary artery with ligation.

Dr. H. A. Christian, Boston: In cases with symptoms below the diaphragm, which simulate abdominal conditions, a diagnostic point is the remarkable fall in systolic blood pressure. The diastolic pressure is little altered. The pulse pressure is strikingly small. In cases in which thrombosis takes place with very few symptoms, the patient, while sick, does not present a characteristic picture and his sudden death causes surprise.

Myrtol and Eucalyptol Poisoning

Dr. Lewellys F. Parker, Baltimore: In view of the fact that myrtol (a preparation closely allied to eucalyptol) is being used in the treatment of putrid bronchitis, it is worth while to mention that symptoms of poisoning have been recorded from these preparations. Myrtol and eucalyptol are both derivatives of myrtaceous plants. Eucalyptol poisoning has followed both overdoses and small doses of the drug, and it appears that some persons may have an idiosyncrasy to it. Two different syndromes have been noted in the aftereffects—first, nervous system involvement with collapse; second, dermatitis. In the nervous type the patient becomes seriously ill shortly after the dose. Vomiting, diarrhea and coma may follow. Vomiting must be induced to prevent further absorption of the poison. Skin lesions are often associated with the nervous lesions. Several fatalities have been reported from time to time. A greatly increased use of eucalyptol has resulted from its employment as a solvent for the neutral hypochlorite solution, dichloramin-T.

Comparative Food Value of Protein, Fat and Alcohol in Diabetes Mellitus as Measured by the Nitrogen Equilibrium

Dr. H. O. Mosenthal, Baltimore: In our experiments we desired to maintain the protein tissue in spite of using a carbohydrate free diet. The patient was put on 1,000 calories with a constant proportion of protein and fat. Then 500 calories of protein, fat or alcohol were added. Three periods were used—fat period, alcohol period, protein period. Finally there was a control period. On 1,000 calory diet there was a constant loss of nitrogen. With an additional 500 calories of fat there was no great improvement in the nitrogen balance. The fat was assimilated, but did not spare the protein. The same held true with alcohol. The alcohol possibly saved the body fat but not the nitrogen. The results with protein addition were strikingly different. The positive nitrogen balance was very marked indeed with 1,500 calories. Two patients who did not take the alcohol did not get the results. The fat and alcohol had been used to conserve the fat of the body, while the protein preserved the protein even on the protein and fat diet.

Relation of War Wounds to Acute Endocarditis

Dr. H. T. Karsner, Cleveland: I performed eighty-eight necropsies in a military hospital. Fourteen cases showed lesions of acute endocarditis following septicemia and pyemia. The organisms responsible were mostly streptococci. Three showed the *Staphylococcus aureus*. In one case the *B. perfringans* was found in the blood stream at death. These infections followed multiple extensive wounds, not of any particular type, but in cases in which an attempt was made to save the injured parts and the wound was allowed to drain pus for weeks and weeks. In the effort to save the joint, extensive damage was done to the heart and kidneys. In the later months of the war, an effort was made to determine whether the age of the soldier and the length of his term of service had any influence on these conditions. It was found that if the man was less than 27 years of age and had less than twenty-two months' service, the kidney weight and the heart weight were normal. The principal factor seemed to be the length of service, prolonged service leading to a great increase in the weight of the heart.

Trench Fever

Dr. Eugene L. Opie, St. Louis: This paper is the result of studies by Drs. Strong, Swift, MacNeal and Pappenheimer and myself. Two problems were studied: (1) infectivity of the blood: Of sixteen men inoculated with infected whole blood, fifteen developed trench fever. Of five inoculated with clear plasma, all contracted the disease. The corpuscles of the blood, then, does not carry the infection. Inoculations of plasma passed through a Berkefeld filter does not cause infection. Filtered virus, then, does not produce the disease. The inoculation period was from five to twenty days. The second problem was to determine whether lice transmitted the disease. Of twenty-two volunteers, bitten by infected lice, fourteen developed the disease. Eight volunteers, not bitten, did not develop the fever. Lice from trench fever patients were put on the volunteers and kept there thirty days till the fever developed. After forty-eight hours lice were removed from half of the volunteers and put on other volunteers, to exclude the possibility of mechanical transmission, directly from patient to individual. It was proved that the virus carried the infection. The lice were put on the arm in a piece of old undershirt, so that eggs and larvae were reproduced normally, and these were strapped on; the men were allowed to scratch so that normal skin irritation was produced. The inoculation period after biting was from nineteen to twenty-five days as compared with from five to six days with the plasma infection. The conclusions from these experiments were that (1) direct transmission is not essential; (2) if lice carry the disease, measures should be taken to combat it by eradication of lice; (3) the eradication of lice and by this means, eradication of the disease, is not impracticable.

DISCUSSION

Dr. Futcher, Philadelphia: I had an opportunity to see cases of trench fever in an English base hospital. Distressing nocturnal pain was a symptom of the disease. Sir David Bruce conducted some experiments in the Hampstead hospital. He found that if 500 lice that had bitten trench fever patients were allowed to bite volunteers, the results were negative as far as transmission of the disease was concerned. It was not stated how long the lice had fed on trench fever patients. In discussing these experiments it was asked if the patients had been allowed to scratch and it was found that they were prevented from scratching. Another series of experiments were then started. The arms of the volunteers were scarified. The lice were allowd to bite and the bodies of the lice were rubbed into the abraded surface. In seven days the volunteers developed trench fever. The experiments, however, as far as the biting was concerned, were not so conclusive as are those of Dr. Opie. It seems possible that there may be two modes of transmission—by the bite and by the excrement of the lice getting rubbed into the abraded surface. It is found in the trenches that lice leave the body of a trench fever patient and go to a healthy person. It is also necessary to determine whether the disease is transmitted from one to another by lice or whether it is a disease of the louse itself.

Dr. E. L. Opie, St. Louis: I have tried scarification experiments. It seems to add little to the knowledge obtained by injecting whole blood; but there is obviously a possibility of introducing the virus directly through the skin. The incubation period of seven days corresponds to that when whole blood is injected into the circulation.

MISSOURI STATE MEDICAL ASSOCIATION

Annual Meeting, held at Jefferson City, May 6-8, 1918

Dr. Robert E. Schlueter, St. Louis, in the Chair

Sterility Due to Retrodisplacement of the Uterus: Treatment

Dr. E. Lee Dorsett, St. Louis: The following have an important bearing: 1. Careful history taking and repeated examinations of both husband and wife to eliminate all other causes of the existing sterility. 2. The use of nonoperative measures before resorting to operative procedures. The use of both methods is oftentimes more successful than one alone. 3. The fallacy of the benefit of a curettement in cases of sterility; the injury to the endometrium caused by a curettement; care in the use of sounds and pessaries. 4. Selection of the operation to correct the condition of the cervix and the uterine displacement. 5. Importance of the after-treatment of all cases and reexamination after the patients leave the hospital.

Vaginal Drainage in Pelvic Cases

Dr. Frank Hinchey, St. Louis: Vaginal drainage, by the use of a tube through the culdesac, is not resorted to as frequently as it should be. The measure is absolutely safe and efficient and, perhaps, saves lives when the operator is in doubt as to whether or not he should drain. The indications for its use are: (1) When a suprapubic drain seems to be indicated; (2) when the intestine, a ureter or the bladder has been injured; (3) when a piece of suspicious tissue must be left in the pelvis, or infectious product has escaped; (4) when there has been much loss of blood—much traumatism, as in severe pus cases of ruptured ectopic pregnancies.

Though Yates has shown the futility of drains placed in the general peritoneal cavity, because of the formation of adhesions around the drain, the vaginal route possesses the advantage of being favored by gravity, and as the drain projects only a small distance into the peritoneal cavity the adhesions which nullify the usefulness of a suprapubic drain do not form. While, perhaps, it is not good surgery to use the vaginal route to attack abscess formations in the culdesac, because of the doubt of removing all of the trouble, cases occasionally arise in which this seems the only safe measure. But I disapprove of the opening of the vagina to evacuate abscesses, and immediately follow this with an abdominal section. Pelvic infections following pregnancy should, as a rule, be opened through an incision above Poupart's ligament because of danger of invasion of the general cavity. A split rubber tube, with gauze insert, is sewed with catgut at the opening in the culdesac and permitted to remain a week, or until the suture is absorbed. No douches are given.

Can We Disregard the Calendar in Setting the Date for Labor?

Dr. F. T. Van Eman, Kansas City: I have believed for years that one great source of trouble is the unfavorable proportion existing between the mother's pelvis and the child's head. Finally, taking advantage of the McDonald and Ahlfeld plans of estimating the maturity of the fetus, I began to induce labor at or near term, when the rights of the fetus seemed surely conserved, with results that seem very promising.

Passing of the Curet, or the Conservative Treatment of Abortion

Dr. George C. Mosher, Kansas City: In 1914 I became convinced that gynecologists had led the profession astray in regard to curettage. In my service all these patients are put in a modified Fowler position, given a large dose of magnesium sulphate, and an ice bag is applied to the abdomen. In the beginning the cases were differentiated as to streptococcus, staphylococcus or colon bacillus, but after a short experience no attempt has been made to discriminate.

The results of this conservative plan are remarkable. Taking 100 cases from the records of 1910 to 1914 when the curet was employed almost as a routine practice, the number of days in the hospital was 22.3. Now, in our new series the average is 8.5 days, a saving to the taxpayers of two weeks' expense on each patient, not to mention the benefit to the patient herself. The percentage of complications under the old régime was 70, including cellulitis, inflammation of the adnexa, abscess, and other forms of localized or general infection; under the new operative method complications are reduced to 5 per cent. The only indication for interference is hemorrhage, and the degree is to be weighed by the obstetrician. Packing under aseptic conditions is the treatment. Pituitary solution has not seemed to exert much influence in these cases, but it is not contraindicated. When used it should be given in dose of from ⅙ to ⅓ c.c. hypodermically. Morphin may be allowed, but only as necessary to relieve pain.

The Hodgen Splint in the Treatment of Fractures of the Femur

Dr. C. F. Sherwin, St. Louis: The Hodgen splint has proved highly efficient in the treatment of all fractures of the femur, at least above the lower third, and when properly applied and adjusted gives results vastly superior to most other appliances for such fractures. It is simple in construction and practically painless in application; requires no anesthetic or other procedure for "setting" the fracture, as the bone fragments are automatically pulled into place by the gentle traction, and the limb is kept at a constant length, easily verified and controlled by occasional measurements. It affords maximum comfort to the patient, permitting him to move about the bed, or even to another bed, lift his hips or even his body, and recline on the back rest or even sit up, if desired. It permits of observation and massage of the limb at all times, and of having any wounds dressed, all without the least pain to the patient or danger of injury to the limb.

The Hodgen Extension Suspension Splint

Dr. F. G. Nifong, Columbia: The Hodgen splint was never popularized as it should have been. All types of simple fracture of the femur, and likewise fractures with lacerated and septic wounds are successfully treated with the Hodgen splint. Modifications are easily made to meet various requirements. Simplicity characterizes the Hodgen splint. It immobilizes the site of fracture; it produces the necessary extension, which is the most important of all factors in treating long bones; it secures suspension, which is a factor of great value in wound treatment and of much comfort to the patient; it prevents muscle injury and paralysis by putting the limb at perfect rest in physiologic flexion; it mobilizes the limb as well as the patient, a very important consideration, especially in the aged; it is applicable to every form of fracture from the neck of the femur to the foot, simple and compound. As an emergency and transport splint the modification of the Hodgen splint cannot be excelled.

Painful Feet

Dr. Robert McE. Schauffler, Kansas City: Shoe manufacturers have in recent years put on the market a number of styles of shoes, or appliances to put in shoes, supposed to be designed on orthopedic principles, and many retail shoe shops have a clerk who is styled an orthopedic specialist to prescribe for foot ills. These devices are not entirely devoid of merit, but in view of the effort made to create the impression that an orthopedic clerk is sufficient for almost all foot problems, I have thought it would be of interest to study a series of consecutive cases of painful feet. Omitting all cases in which the foot trouble was only a part of the general disability of infantile paralysis or spastic paralysis, or of a multiple arthritis, and omitting congenital clubfoot, there remain eighty cases. These fall under thirty-nine heads. The three largest divisions are: Weak feet, eight; simple flatfoot, eight; flattened metatarsal arch, ten. This seems to demonstrate the need of scientific diagnosis and special treatment.

The Small Hospital in Rural Places

Dr. N. I. Stebbins, Clinton: Small hospitals may be made as efficient as large ones. Physicians associated with such institutions may be able to specialize along certain lines. They may have the privilege of roentgen-ray and laboratory work to assist in making a diagnosis, thus enabling them to do better work and obtain better results. The people should be educated to make more use of hospitals throughout the rural districts. The size of a hospital should not be a feature in the consideration of classification, but equipment, efficiency of the staff, and the records should be a basis for criticism.

Treatment of Cavernous and Plexiform Angioma

Francis Reder, St. Louis: A cavernous angioma is a soft, nonpulsating swelling, of variable size, with a thin covering of skin, usually bluish. Its great differential factor is that the entire tumor can be caused to disappear on pressure, with a prompt return to its original size as soon as the pressure is removed. Not so with a plexiform angioma. Pressure on the mass will not cause it to be evacuated completely. Well marked pulsation and bruit give it its differential characteristics from a cavernous angioma. In my series of 104 cases which have been treated by injection of boiling water, there were no failures. In most instances the results have been very gratifying. In the majority of the cases the lesion was on the face and scalp. Four patients presented angiomas on the tongue, ranging from the size of a filbert to that of an English walnut. One patient presented a lesion as large as a coconut on the left gluteal region.

Prostatic Enucleation

Dr. Leon Rosenwald, Kansas City: By enucleating the growth from the prostate there is very little hemorrhage, and the ejaculatory ducts are not injured. The two-step operation should be a routine measure. Cystotomy should be done under local and enucleation under spinal anesthesia. The latter is safer, gives more relaxation than general anesthesia, and avoids the suppression that follows ether. Furthermore, the ability of the patient to take large quantities of water immediately following the operation encourages kidney action.

Myositis Ossificans Traumatica

Dr. T. G. Orr, Kansas City: The symptoms of the type due to a single severe trauma are marked pain, rapid swelling and disability, followed in three or four weeks by a firm mass in the swollen area. The diagnosis is not usually difficult but must be distinguished from periosteal sarcoma. The prognosis is ordinarily good. After a few months of disability the bone formation ceases to increase in size, and there is usually some resorption of bone. The treatment should be conservative if there is not serious interference with function. After early operation there is very frequently a recurrence of the growth. I have had three cases, one a typical "rider's bone," one an ossification in the Achilles tendon following an open wound in childhood, and the third a typical example of intramuscular ossification in the quadriceps following a single severe injury while playing football.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

May, 1918, **24**, No. 1

1 Cell Potentialities and Differential Factors, Considered in Relation to Erythropoiesis. V. Danchakoff, St. Louis.—p. 1.
2 Development of Idiosome in Germ Cells of Male Guinea-Pig. G. N. Papanicolaou and C. R. Stockard, New York.—p. 37.
3 Weight of Epididymis, Pancreas, Stomach and Submaxillary Glands of Albino Rat (Mus Norvegicus Albinus) According to Body Weight. S. Hatai, Philadelphia.—p. 71.
4 Megacytes in Lymphatic Tissues. A. W. Meyer.—p. 91.
5 Studies on Hemal Nodes. Absence of Hemal Nodes in Domestic Fowl. A. W. Meyer.—p. 109.

American Review of Tuberculosis, Baltimore

May, 1918, **2**, No. 3

6 Nerves and Ganglia of Lung in Case of Pulmonary Tuberculosis. W. S. Miller, Madison, Wis.—p. 123.
7 Manifest Pulmonary Tuberculosis. G. E. Bushnell.—p. 140.

Annals of Surgery, Philadelphia

May, 1918, **67**, No. 5

8 *Operative Treatment of Fracture of Spine Uncomplicated by Cord Injury. E. G. Brackett, W. J. Mixter, Boston, and J. C. Wilson, Los Angeles, Calif.—p. 513.
9 *Surgery of Spastic Paralysis. A. B. Gill, Philadelphia.—p. 529.
10 Case of Contracture of Bladder (Hypertonia Vesicae) Due to Spinal Injury. M. W. Ware, New York.—p. 533.
11 Loose Cartilage in Temporomaxillary Joint. R. J. Behan, Pittsburgh.—p. 536.
12 Prevention of Permanent Bronchial Fistula Following Lung Resection. H. Lilienthal, New York.—p. 538.
13 *Effect of Splenectomy on Normal Individual and in Certain Pathologic Conditions. J. M. Hitzrot, New York.—p. 540.
14 *Value of Pyloric Exclusion in Treatment of Pyloric and Duodenal Ulcers. R. Lewisohn, New York.—p. 560.
15 *Immediate Jejunal Feeding After Gastro-Enterostomy. A. F. R. Andresen, Brooklyn.—p. 565.
16 *Developmental Reconstruction of Colon. J. W. Draper, New York.—p. 567.
17 Case of Omphalomesenteric Duct; Intestinal Obstruction. M. T. Sudler, Rosedale, Kan.—p. 575.
18 Closure of Abdominal Incision with Silver Wire. C. G. Child, Jr., New York.—p. 578.
19 *Composite Study of Hypogastric Artery and Its Branches. B. Lipshutz, Philadelphia.—p. 584.
20 Case of Fracture of Great Toe Sesamoid Bones. T. G. Orr, Kansas City, Mo.—p. 609.

8. **Treatment of Fracture of Spine.**—A study of twenty-five cases made by Brackett, Mixter and Wilson is strongly in favor of early operative action in cases of fractures of the spine. A large percentage of the cases which could be followed showed partial and even complete disability for years after the injury, many of which had prolonged mechanical treatment by fixation and support. It would seem, also, that the continuance of the mechanical support after a few months does not materially influence the result, but was of value in giving added comfort while wearing such support. This fact alone, namely, the failure of mechanical treatment, would seem to warrant active radical measures, provided the operative methods give reasonable assurance of benefit, and provided the indications for operation could be formulated. On the other hand, the results of early operative treatment, in the cases which have been watched would seem to indicate definitely that early operation is a measure to be advocated in a very large number of cases. The writers suggest operation in the cases which show the following conditions: 1. Fresh fracture: (*a*) Crushed fracture of the bodies of one or more vertebrae associated with disalinement of fragments, particularly with involvement of any part of the lamina; (*b*) fracture of the fifth lumbar, of any part, but particularly with involvement of the lamina; (*c*) fracture of body showing increasing knuckle, abnormal mobility at point of fracture, or complicated with rupture of the supraspinous or interspinous ligaments. 2. Old fracture cases which show the persistent disability, as evidenced by inability to work, accompanied by continuance of pain, local or referred, and with general back weakness, operation is advocated. Operation in the decade between fifty and sixty does not seem to be contraindicated. The social position may at times have influence in directing for or against operation, for when the most rigid early care can be given, much more might be expected from early fixation treatment. Freedom from pain, however, in the early weeks of recumbent and fixation treatment, may be misleading, for it is possible, that even with the relief of all symptoms during the period of recumbency, the pain may return and cause disability when the patient becomes ambulatory and begins to use the spinal column. A very severe injury and perhaps extensive crush may result in a quicker and more complete recovery than in some of the apparently lesser ones.

9. **Surgery of Spastic Paralysis.**—Gill has performed thirty-five Stoeffel operations on the popliteal, the sciatic, the obturator, and the median nerves. The results have been so satisfactory that the operations have been done routinely. In several instances a second operation was performed, when it was found that too little of the nerve supply had been resected at the first operation. It is better to resect too little than too much. In operations on the lower extremity the results have appeared to be almost uniformly successful and satisfactory. In resections of the median nerve of the arm the results are not functionally so good, although the cosmetic results are satisfactory. Following operation the after-treatment should be thorough and persistent in educating the weakened muscles and in securing coordination.

13. **Effects of Splenectomy.**—Hitzrot summarizes what is known about the anatomy, the physiology, and the clinical features of splenic disease, with special reference to the effect of splenectomy both in the normal and in the pathologic animals as gained by observations in seventeen cases of splenectomy (sixteen personal cases; one case reported by Conner and Downes). The series contains seven cases of splenomegaly of varying types (splenic anemia [Banti's], three; splenomegaly of unknown type with anemia, one; hematogenous jaundice, two; von Jaksch's anemia, one), two cases of pernicious anemia and one case of splenomyelogenous leukemia. Of the three cases of Banti's disease, one patient was markedly improved for nine months and then, due to the increasing cirrhosis of the liver, developed ascites, and in the fourteenth month a mesenteric thrombosis from which he died. The second splenectomy for Banti's disease is now six months past the operation, and is in splendid health and without symptoms. The third patient is serving in the army. As for the case of splenomegaly with anemia the patient has shown no change in weight since the operation. Her general health has improved, and three years after operation she reports that she is well but has a small baby and could not appear for examination. Both cases of hemalogenous jaundice have recovered from the symptoms which existed before the operation performed three and one half and eight years ago.

Following the splenectomy done for von Jaksch's anemia there was a rapid rise in the hemoglobin and in the red cells, which has remained permanent. The white cells showed no definite change following the splenectomy, and such changes as did occur took place in the polymorphonuclears, which rose in two weeks to approximately the normal polynuclear percentage (before operation they were only 25 per cent. of the white cells). One month after operation, hemolysis began at 0.50 and was complete at 0.38. Nine months after operation hemolysis began at 0.44 and was complete at 0.28, showing a marked increase in the resistance of the cell. The most striking feature of this particular case was the shower of nucleated red cells which was noted twelve hours after the operation. At one time (five days after operation) the nucleated red cells represented 85 per cent. of the nucleated cells in the smear. The child rapidly improved both in weight and height on exactly the same diet she had had before the operation, and in this case the effect of the splenectomy was even more striking than that procedure in the acholuric jaundice cases. The anemias in which there is a disturbance of blood formation cannot be benefited by splenectomy, inasmuch as the trouble does not lie in the spleen, but in the blood forming organs.

14. **Value of Pyloric Exclusion in Ulcers.**—Experiments performed by Lewisohn demonstrated *ad oculos* the efficient way in which pyloric exclusion sidetracks food. The changes produced in the chemistry of the stomach after gastro-enterostomy were not considered in these experiments. It is a well known fact that, following a gastro-enterostomy, bile and pancreatic juice are regurgitated through the stoma into the stomach, thus diminishing the hyperacidity considerably. This change of the chemism of the stomach is of the utmost importance. Lewisohn believes that improvements in the clinical condition after gastro-enterostomy without pyloric exclusion are based solely on the changes of the chemistry of the stomach. Gastro-enterostomy plus pyloric exclusion is however far superior to simple gastro-enterostomy. It gives the patient the benefit of the chemical changes just mentioned and, in addition to that, it safeguards the ulcers against mechanical insults, thus hastening the healing of the ulcer-bearing area

15. **Immediate Jejunal Feeding After Gastro-Enterostomy.**—Andresen has found that it is practicable, at the time of operation, to insert a previously swallowed Rehfuss gastroduodenal tube well into the jejunum and to commence at once, on the operating table, the feeding of peptonized milk, dextrose and alcohol mixtures, thus making sure that the nourishment administered actually is made use of by the body. Andresen considers that immediate jejunal feeding after gastro-enterostomy is not only a safe, but an extremely valuable, procedure and is to be recommended not only in the operations performed for stenosis but should be tried in all types of cases, as being a more certain, and, in most cases, a less uncomfortable method of postoperative administration of fluid and nourishment than the methods ordinarily employed.

16. **Developmental Reconstruction of Colon.**—In twenty-nine human cases of developmental reconstruction of the colon five have died, a mortality rate of 17 per cent. Four deaths occurred in the first eight cases. One death in the last twenty. Draper and his co-workers resected the terminal 10 cm. of the ileum and the cecocolon in block to the neighborhood of the right colic artery. This corresponds to a point on the transverse colon near to the right margin of the omentum. Indications for developmental reconstruction: 1. Segmental infection of the cecocolon. 2. In Lynch's elbow deformity of the mid-ascending colon when the peritoneum cannot be repaired after reduction. 3. In exaggerated nonfusion of mesentery, allowing such freedom of motion as occasionally to result in volvulus. Developmental reconstruction has superseded in their clinic all the earlier forms of operative procedure such as ileocolostomy, cecosigmoidostomy, etc., because it is no more dangerous operatively and gives better results because it removes the biologically decadent and diseased organ and restores the individual to the carnivorous type of colon undoubtedly best suited to man.

19. **Study of Hypogastric Artery.**—This paper, the third of the blood vascular tree studies, presents a composite study of the hypogastric (internal iliac) artery, and is based on records and observations made from dissections of ninety-three cadavers. There were ninety-one dissections of the hypogastric artery on the right side of the body and ninety dissections on the left side, making 181 dissections in all. Section A of this paper presents observations on the point of bifurcation of the aorta, and the length and point of bifurcation of the common iliac and hypogastric (internal iliac) arteries. Section B contains a description of the types of hypogastric artery. Section C embraces a description of the individual branches of the hypogastric artery. Section D summarizes and discusses the results of the study.

Archives of Internal Medicine, Chicago

May, 1918, **21**, No. 5

21 *Experiments on Vasoconstrictor Action of Blood Serum. T. C. Janeway, H. B. Richardson and E. A. Park, Baltimore.—p. 565.
22 *Relation Between Platelet Count of Human Blood and Its Vasoconstrictor Action After Clotting. K. Hirose, Okayama, Japan. —p. 604.
23 *Clinical Calorimetry: Effect of Small Breakfast on Heat Production. G. F. Soderstrom, D. P. Barr and E. F. Du Bois, New York.—p. 613.
24 Id.: Metabolism of Boys Twelve and Fourteen Years Old. W. H. Olmstead, D. P. Barr and E. F. Du Bois, New York.—p. 621.
25 *Id.: Metabolism in Malarial Fever. D. P. Barr and E. F. Du Bois, New York.—p. 627.
26 *Study of Ethylhydrocuprein (Optochin) in Treatment of Acute Lobar Pneumonia. H. F. Moore and A. M. Chesney, New York.—p. 659.
27 *Circulatory Reactions to Exercise During Convalescence from Infectious Disease. H. Mann, New York.—p. 682.
28 *Occurrence of Mitochondria in Red Blood Corpuscles During Experimental Anemias. C. O. Sappington, San Francisco.—p. 695.

21. **Blood Serum as Vasoconstrictor.**—The power of blood after clotting or defibrination to constrict blood vessels, as evidenced by its action on perfused organs or on the excised arterial strip, has been frequently observed and to some extent studied as to its nature and origin. The study made by Janeway, Richardson and Park consisted of the vasoconstrictor substance in relation, first, to unclotted blood; second, to the cellular and noncellular elements of the blood; third, to certain biologic, physical and chemical reactions; and lastly, to the process of coagulation. The results of this investigation may be summarized as follows: Uncoagulated blood of the ox or calf has no constrictor action on the excised strip of the ox carotid. Blood platelets of ox, dog or pig yield an extract which has a powerful vasoconstrictor action. Erythrocytes yield no vasoconstrictor substance. Leukocytes, as represented by the cells of the pleural exudate of the dog, yield none. Plasma can be obtained free of vasoconstrictor substance. Its constrictor action, when present, is probably due to changes occurring after it leaves the blood vessels. The circulating plasma of normal animals has probably no such vasoconstrictor action. The vasoconstrictor substance (or substances) is neither protein nor epinephrin. It is a crystalloid more readily extracted by water or alcohol than by ether or chloroform, and is probably not related to cholesterol. The vasoconstrictor substance, though present in coagulated blood, is not dependent on the actual formation of the blood clot, nor is it related to any of the factors concerned in coagulation, with the possible exception of thromboplastin.

22. **Platelet Count and Vasoconstriction.**—Fourteen experiments were performed by Hirose in which blood from twenty-eight patients was examined. These experiments were performed by bringing the defibrinated blood into contact with the surviving carotid of the ox suspended according to Meyer's method and registering its degree of constriction on a revolving drum by means of a magnifying lever. In these experiments bloods of about equal platelet counts produced approximately the same degree of vasoconstriction. With one exception, bloods of higher platelet count produced more marked constriction than bloods of much lower platelet count. This one exception was the blood from a case of polycythemia with a count of 314,000, compared with blood from a case of chronic nephritis with a count of 189,000. The difference in platelet content here is relatively slight. Of nine specimens of blood with a platelet count less than 100,000 only three produced any constriction of the artery when diluted with two volumes of Locke's solution, and only four when diluted with equal parts of Locke's solution. Two of these were from cases of pernicious anemia, one from a case of cirrhosis of the liver, and the fourth from a case of myeloid leukemia.

23. **Effect of Small Breakfast on Heat Production.**—Ten experiments were made by Soderstrom and his associates on five subjects to determine the extent of the rise in metabolism following a small meal. The standard breakfast used in all observations consisted of 30 gm. bread, 8 gm. butter, 10 gm. sugar, and 60 c.c. milk, amounting to 4.7 gm. protein, 9.0 gm. fat, and 28.9 gm. carbohydrate, or 222 calories. In the first hour following the ingestion of this the heat production increased on an average 7 per cent.; in the second hour, 2 per cent.; in the third hour, 2 per cent. In the sixth, seventh and eighth hours the metabolism was slightly lower than before the breakfast. It is evident that when this small

amount of food is taken for breakfast it is only during the first hour that the absorption of food could have been in sufficient quantity to produce the condition of a "metabolism of plethora."

25. **Metabolism in Malarial Fever.**—Seven observations were made by Barr and Du Bois on five patients when they were without fever. Four of these were in the intervals between the paroxysms; three after treatment. In all cases the methods of direct and indirect calorimetry were use. For the total series of experiments the calories, as measured by these two independent methods, agree within 0.08 per cent. of each other. The rectal temperature, which was measured every four minutes, showed typical malarial curves. Rectal temperature falls much more gradually than it rises. The surface temperature at first may continue to rise, then to fall gradually for a period, and later to fall at about the same rate as the rectal temperature. The heat production increases 100 to 200 per cent. during the chill; immediately after the chill it falls to within 20 to 38 per cent. of the average basal level; with the falling temperature the heat production drops to normal. During the period before the chill with constant temperature the heat elimination equals the heat production. During the chill, in spite of the enormous increase in heat production, the heat elimination is the same as in the preliminary period. Almost all of the extra heat produced is stored in the body tissues. In the fourth period of rising temperature after the chill there is a slight increase in heat elimination. In the fifth period of continuous temperature heat elimination begins to equal heat production. In the sixth period of falling temperature the heat elimination is greatly increased, chiefly by means of a large increase in the vaporization of water from the skin. Of the total calories produced in this period the patient loses a much larger percentage than normal through vaporization. On the other hand, the percentage of calories lost through vaporization is not greatly increased in its relationship to the total heat elimination. The respiratory quotients during the chill are higher than before or after the chill, suggesting the rapid combustion of glycogen stores during the violent muscular exercise of shivering.

26. **Ethylhydrocuprein in Treatment of Pneumonia.**—Moore and Chesney present the data accumulated in an extension of their former work and give the final results of two years' experience in the treatment of lobar pneumonia with ethylhydrocuprein. The experimental results obtained during the first year have been, for the most part, confirmed by the study of cases treated during the second year, and, in addition, some new facts have been ascertained. Of the forty-three patients treated with ethylhydrocuprein during the season 1916-1917, two received the base (optochin base) by mouth. Forty received the hydrochlorid by mouth and one patient received the hydrochlorid intramuscularly at first, and later by mouth. The serum of the two patients who received the base by mouth failed to show either bactericidal activity or power temporarily to inhibit the growth of pneumococci, although the amount of the drug given should have been sufficient to produce such a result if the base were as readily absorbable as the hydrochlorid. The authors suggest that the difficulty of absorption from the gastro-intestinal tract is undoubtedly dependent on the fact that the drug in this form is very slighly soluble. During treatment with ethylhydrocuprein pneumococci in the human body can gradually become "fast" or resistant to its action. The pericardial fluid obtained postmortem from patients treated with ethylhydrocuprein hydrochlorid showed pneumococcidal power. The serum of one patient who received a very large dose of ethylhydrocuprein hydrochlorid intramuscularly showed pneumococcidal power.

Among seventy-five patients treated with ethylhydrocuprein there were nine who showed some degree of amblyopia (12 per cent.); this was mild in three cases and more severe in six. In all those who recovered from the pneumonia, the eye symptoms disappeared completely after the administration of the drug had been discontinued. The systematic use of ethylhydrocuprein (optochin) in the treatment of seventy-five cases of acute lobar pneumonia due to pneumococci did not lead to any noteworthy therapeutic benefit. The authors suggest that the failure of the ethylhydrocuprein treatment to influence favorably the course of the disease is probably due to the following: (*a*) It is impossible to administer a sufficient amount of the drug to produce an effective concentration in the blood stream without at the same time exposing the patient to the danger of toxic action. (*b*) The rate of the pneumococcidal action of ethylhydrocuprein is too slow in the concentrations which may be attained in the blood stream of the patient with any degree of safety; pneumococci, therefore, may gain access to the circulating blood at a greater rate than they are destroyed therein, even though the serum show pneumococcidal action. (*c*) In the concentrations which are safely attained in the body fluids the drug probably penetrates but poorly into the alveolar exudate. The routine use of ethylhydrocuprein in the treatment of acute lobar pneumonia cannot be recommended.

27. **Circulation During Convalescence.**—The circulatory reactions of ten patients convalescing from acute infectious disease were studied objectively by Mann. The pulse reactions did not give any information of value. The blood pressure reactions, however, showed a progressive increase in the amount of work necessary to produce a "delayed summit."

28. **Mitochondria in Red Cells in Anemia.**—Increased formation in the number of mitochondria containing red cells was produced experimentally by Sappington by the removal of blood or by the injection of phenylhydrazin hydrochlorid. The degree of this increase was in the individual case roughly proportional, and on the average exactly proportional, to the need for red cells as measured by the degree of anemia produced. These experiments, therefore, support the suggestion that the number of red cells containing mitochondria may prove to be a useful indication of the rate of red blood cell formation in clinical and experimental conditions.

Boston Medical and Surgical Journal

May 23, 1918, **178**, No. 21

29 Relation of Physician to Workmen's Compensation. F. D. Donoghue, Boston.—p. 693.
30 Application of Anaphylactic Skin Tests to General Medicine. S. Ayres, Jr., Boston.—p. 697.
31 Differential Diagnosis in Psychiatry; Comparison of Symptoms in Various Disease States. L. G. Lowrey, Boston.—p. 703.
32 Structural Deformities vs. Functional Efficiencies as Objects of Treatments. H. W. Marshall, Boston.—p. 708.
33 Beginning of Dispensaries. M. M. Davis, Jr., Boston, and A. R. Warner, Cleveland.—p. 712.
34 Relation of Ductless Glands to Gynecology; Physiologic and Therapeutic. A. H. Bigelow, Boston.—p. 715.

Colorado Medicine, Denver

May, 1918, **15**, No. 5

35 Surgical Treatment of Anemias. F. C. Buchtel, Denver.—p. 114.
36 Bronchoscopy and Esophagoscopy. T. E. Carmody, Denver.—p. 119.
37 .*Achylia Gastrica*. J. L. Mortimer, Denver.—p. 123.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

April, 1918, **11**, No. 3

38 *Circulation in Man in Head Down Position, and Method for Measuring Venous Return to Heart. Y. Henderson and H. W. Haggard, New Haven, Conn.—p. 189.
39 *Influence of Forced Breathing on Circulation. Y. Henderson, A. L. Prince and H. W. Haggard, New Haven, Conn.—p. 203.
40 *New Method for Biologic Standardization of Pituitary Extract and Other Drugs. R. A. Spaeth, New Haven, Conn.—p. 209.
41 *Effect of Lactic Acid on Respiratory Center. S. J. Cohen, Chicago.—p., 221.
42 *Cutaneous Irritation by Mustard Oil as Influenced by Various Solvents. T. Sollmann, Cleveland.—p. 229.
43 *Investigations on Composition of Oil of Chenopodium and Anthelmintic Value of Some of Its Components. M. C. Hall and H. C. Hamilton, Detroit.—p. 231.
44 *Pharmacologic and Therapeutic Study of Benzyl Alcohol as Local Anesthetic. D. I. Macht, Baltimore.—p. 263.

38. **Circulation in Man in Head Down Position.**—The author's object was to determine whether in the normal man an increase of the venous pressure and the venous supply to the heart can be produced by means of the inverted positions and if so whether they will increase the diastolic filling and

the systolic discharge of the ventricles, and the volume of the blood in circulation. In the inverted or head down position (30 to 45 degrees) the heart rate in ten men was slower than in the flat position by an average of 9.5 beats a minute (maximum 23, minimum 4.5), and slower than in the erect position of 17 (maximum 34, minimum 10). The diastolic distending force of venous pressure was increased but arterial pulse pressure was not augmented. This fact the authors interpret in support of the view that normally in the erect position the distending force of venous pressure is above the critical value, and the heart works therefore at maximum efficiency for the rate of beat. No third heart sound was audible in the inverted position. The necessity of recognizing some sort of venopressor mechanism regulating the venous return to the heart is pointed out. A method estimating the efficiency of the venous return is described. By this method it is found that a very distinct decrease in the volume of the venous return is generally induced in man by anesthesia and operation, and occurs also in acute disease.

39. **Influence of Forced Breathing on Circulation.**—The results obtained on six healthy men who had had some practice in the performance of voluntarily forced breathing were very clear and decisive. 1. Venous pressure in the inverted position after forced breathing underwent in every case a very marked and strikingly long continued fall, amounting to 8 to 11 c.mm. blood. Recovery did not occur in any case until many minutes after apnea had terminated. 2. The arterial pressures, systolic, diastolic and pulse, were not greatly affected. 3. The tachycardia which forced breathing usually induces was suppressed by the inverted position. 4. Evidently the disturbance of the circulation induced in man by acapnia consists chiefly and fundamentally in a decrease of the venous return to the heart. The evidence seems to be well rounded out that this type of circulatory depression is a very common occurrence under anesthesia and operation and in some other conditions.

40. **Standardization of Pituitary Extract.**—This test consists of a study of the action of the drug on the melanophores of Fundulus which, Spaeth says, must be considered functionally modified smooth muscle cells, thus opening a new approach to various pharmacologic problems, including that of biologic drug standardization.

41. **Effect of Lactic Acid on Respiratory Center.**—In a series of forty-four determinations on ten dogs, Cohen noted that intravenous injections of 0.5 c.c. of normal lactic acid per body kilogram weight produce a marked increase in respiration, both in amplitude and in rate. The action was almost immediate, with a latent period of fifteen to thirty seconds and with a duration of two to four minutes. This response is not specific for lactic acid, but may be produced by practically any organic or inorganic acid. Cohn suggests that the mechanism of this hyperpnea probably involves three factors: (*a*) the acid may liberate carbon dioxid from the blood carbonates, and the excess carbon dioxid may play some part in the excessive movement; (*b*) the acid may act as a direct respiratory stimulant; (*c*) probably the most important factor, the acid sensitizes the respiratory center. The reaction is most probably due to a synergistic action of the acid and carbon dioxid on the respiratory center.

42. **Cutaneous Irritation by Mustard Oil as Influenced by Various Solvents.**—Sollmann says that olive oil and other good solvents for mustard oil hinder its penetration into the skin. The greatest irritation is obtained by watery suspensions, for instance, in mucilage. Olive oil and turpentine produce practically no hyperemia; ether and absolute alcohol produce very little hyperemia; 95 per cent. alcohol causes a distinct hyperemia, whereas 50 per cent. alcohol causes marked and lasting hyperemia; mucilage of acacia and simple syrup cause the most intense and persistent hyperemia.

43. **Composition of Oil of Chenopodium.**—The experiments made by Hall and Hamilton appear to warrant the conclusion that oil of chenopodium as ordinarily marketed is a very potent and valuable anthelmintic, but that it not infrequently acts as a gastro-intestinal irritant, a fact that seems to have been commonly overlooked, disregarded or allowed to go unstated. The gastro-intestinal irritation seems to be due to constituents making up a fourth, or less, of the volume of the oil. The use of the lighter fraction as an anthelmintic in preference to the entire oil, in order to protect the patient from gastro-intestinal irritation, is apparently indicated.

44. **Pharmacologic Study of Benzyl Alcohol.**—Experimental data and clinical cases show that benzyl alcohol is an effcient local anesthetic when administered in aqueous solution. This alcohol is soluble up to 4 per cent. in water in physiologic saline. These concentrations appear to be entirely efficient for practical purposes. The interesting features in connection with this drug which should be especially emphasized are in the first place its low toxicity as compared with that of the commonly employed local anesthetic alkaloids of which cocain is the standard representative. The next interesting and important feature in connection with benzyl alcohol as an anesthetic is the ability of the organism to metabolize it and excrete it in an innocuous form. Third, an important feature of this local anesthetic is its high boiling point and the consequent ease of sterilization. Last, the comparatively low price of the drug and its ease of production.

Maine Medical Association Journal, Portland

May, 1918, **8**, No. 10

45 Orthopedic Treatment of Infantile Paralysis. A. T. Legg, Boston.—p. 275.

Medical Record, New York

May 25, 1918, **93**, No. 21

46 Method and Organization of Reeducation for War Cripples in Germany. D. C. McMurtrie, New York.—p. 881.
47 Direct Examination of Duodenal Contents in Affections of Gall-bladder and Allied Organs. M. Einhorn, New York.—p. 885.
48 Adiposis Tuberosa Simplex; Report of Three Cases. J. M. Anders, Philadelphia.—p. 888.
49 Health School Child; Schenectady's System of Keeping Him Healthy. W. J. Brooks, Schenectady.—p. 890.
50 Waste Caused by Preventable Disease of Intestinal Origin. V. G. Heiser, New York.—p. 897.

Medicine and Surgery, St. Louis

March, 1918, **2**, No. 3

51 Psychopathology and Criminology. W. J. Hickson, Chicago.—p. 245.
52 Shell Shock Analogues; Neuroses in Civil Life Having Sudden or Critical Origin. M. C. Jarrett, Boston.—p. 266.
53 Analysis of Accuracy of Early Psychiatric Diagnoses. L. G. Lowrey, Boston.—p. 281.
54 Diagnosis of Acute Psychotic Conditions. D. Gregg, Wellesley, Mass.—p. 290.
55 Neurosis of Housewife. A. Myerson, Boston.—p. 294.
56 Mental Health of Our Future Citizens. E. B. McCready, Philadelphia.—p. 304.
57 Sensory Aphasia, Associated with Right Lateral Homonymous Hemianopsia. J. H. Lloyd, Philadelphia.—p. 312.
58 Fractures of Skull; Resulting Intracranial Pathology and Treatment. W. Sharpe, New York.—p. 319.
59 Case of Syringomyelia with Bulbar Symptoms. E. F. Leonard, Chicago.—p. 334.
60 Obsessive Hallucinations in Child and Psychanalysis. A. Gordon, Philadelphia.—p. 344.
61 Symptomatic Psychoses. C. L. Allen, Los Angeles.—p. 350.
62 How Far Can the Mind Really Influence the Body? M. Solomon, Chicago.—p. 357.
63 Limitations of Psychiatrist. J. Taft, New York.—p. 365.
64 Posttyphoid Headache. E. H. Cary, Dallas.—p. 370.
65 Case of Homicidal Dementia Praecox. G. H. Hill, Des Moines, Iowa.—p. 374.

Mental Hygiene, Concord, N. H.

April, 1918, **2**, No. 2

66 Concerning Prisoners. B. Glueck, New York.—p. 177.
67 Adjustment of Jew to American Environment. A. A. Brill, New York.—p. 219.
68 City School District and Its Subnormal Children; Some Social Problems Involved and Suggestions for Constructive Work. C. M. Campbell, Baltimore.—p. 232.
69 Returned Disabled Soldiers of Canada. W. L. Russell, White Plains, N. Y.—p. 245.
70 Barriers to Treatment of Mental Patients. O. Copp, Philadelphia.—p. 254.
71 Vocational Rehabilitation of Soldiers Suffering from Nervous Diseases. F. H. Sexton.—p. 265.
72 Economic Loss to State of New York on Account of Syphilitic Mental Diseases During Fiscal Year Ending June 30, 1917. H. M. Pollock, New York.—p. 277.
73 Psychiatric Social Work. M. C. Jarrett, Boston.—p. 283.

New York Medical Journal

May 25, 1918, **107**, No. 21

74 Hyperacidity of Gastric Secretion as Prime Factor in Attacks of Angina Pectoris. H. Illoway, New York—p. 961.
75 Standard Methods in Diagnosis and Treatment of Venereal Diseases in Public Dispensaries. H. Emerson, New York.—p. 968.
76 Vaccine Therapy in Chronic Intestinal Toxemia. G. R. Satterlee New York.—p. 971.
77 Some Aspects of Symptomatic Treatment. E. E. Cornwall, New York.—p. 974.
78 Relation of Fresh Air and Housing to Health. F. F. D. Reckord, Harrisburg, Pa.—p. 976.
79 Treatment of Flatfoot. F. R. Newman, Wheeling, W. Va.—p. 978.
80 Choosing the Anesthetist. I. Josephson, New York.—p. 979.
81 Gallstones. S. Weiss, New York.—p. 980. To be continued.
82 Ascending Osteomyelitis in Amputation Stumps with Particular Reference to Thigh. A. Marchand, Lyons, France.—p. 985.
83 Rehabilitation of Disabled Soldiers in New Zealand. D. C. McMurtrie, New York.—p. 986.
84 Some Problems of Nutrition in Army. J. R. Murlin.—p. 987.

New York State Journal of Medicine

May, 1918, **18**, No. 5

85 Value of Routine Examination of Labyrinth. I. H. Jones, Philadelphia.—p. 169.
86 Direct Laryngoscopy in Treatment of Chronic Postdiphtheritic Laryngotracheal Stenosis. H. L. Lynah, New York.—p. 170.
87 Diphtheria in New York State. F. M. Meader, New York.—p. 177.
88 *Floating Kidney, Nephropexy. S. Lloyd, New York.—p. 181.
89 Some Complications and Incorrect Diagnoses in Urologic Surgery. O. S. Lowsley, New York.—p. 184.
90 Common Problems in Diabetes Mellitus. J. R. Williams, Rochester.—p. 191.
91 *Study of Urine in Diabetes Mellitus with Special Reference to Relation of Urinary Acetone Bodies to Ammonia Excretion. J. H. Richards, New York.—p. 193.
92 Abortion and Its Treatment. A. J. Rongy, New York.—p. 196.

88. Abstracted in The Journal, June 9, 1917, p. 1779.

91. **Urine in Diabetes Mellitus.**—The total number of cases studied by Richards is fourteen. The total number of urine examinations is ninety-one. The diet in this series of cases was the von Noorden test diet or, in a few cases a mixed diet such as is known as "regular diet" in Bellevue Hospital. Twenty-eight observations showed urinary acetone bodies with high ammonia and normal rest nitrogen. Four observations showed urinary acetone bodies with normal ammonia and high rest nitrogen. Fourteen observations showed urinary acetone bodies with high ammonia and high rest nitrogen. Eight observations showed no urinary acetone bodies with high ammonia and normal rest nitrogen. Two observations showed no urinary acetone bodies with high ammonia and high rest nitrogen. Fifteen observations showed no urinary acetone bodies with normal ammonia and high rest nitrogen. Eight observations showed urinary acetone bodies with normal ammonia and normal rest nitrogen. Twelve observations showed no urinary acetone bodies with normal ammonia and normal rest nitrogen. Hence it is apparent that there may be an increased excretion of ammonia in the absence of urinary acetone bodies; and there may be a normal excretion of ammonia with urinary acetone bodies. The quantity of sugar excretion has no relation to the ratio of the nitrogen content of urine. In many cases of diabetes there is a disturbance of the ratio of the nitrogen content of the urine which may be corrected by regulating the nitrogen intake, but no correction of the urinary sugar nor of the urinary acetone bodies will correct this nitrogen disturbance.

Social Hygiene, Baltimore

January, 1918, **4**, No. 1

93 Venereal Diseases and War. W. C. Gorgas, Washington, D. C. —p. 3.
94 Campaign Against Commercialized Prostitution Near Military Camps. B. Johnson.—p. 9.
95 California Program for Prevention of Venereal Diseases. W. A. Sawyer, San Francisco.—p. 25.
96 Venereal Diseases and War. W. C. Gorgas, Washington.—p. 39.
97 Venereal Diseases in Civil and Military Life. F. F. Russell.—p. 43.
98 Have We Devised an Effective Medical Propaganda of Venereal Prophylaxis R. C. Holcomb.—p. 47.
99 Program of Commission on Training Camp Activities with Relation to Problem of Venereal Disease. R. B. Fosdick.—p. 71.
100 Community Control of Venereal Diseases. J. W. Kerr, Washington.—p. [illegible]
101 Venereal Disease in Civil Community. W. H. Frost.—p. 81.
102 Social Hygiene and War. P. B. Johnson, Washington, D. C. —p. 91.

Southern Medical Journal, Birmingham, Ala.

May, 1918, **11**, No. 5

103 *Usefulness of Blood Chemical Methods in Differential Diagnosis of Cardiac and Renal Disease. R. B. H. Gradwohl and C. Powell, St. Louis.—p. 335.
104 Pollinosis or Hay-Fever; Its Specific Treatment. S. R. Miller and W. A. Baetjer, Baltimore.—p. 341.
105 Trichocephalus Dispar. S. B. Strong, Preston, Cuba.—p. 345.
106 Râles After Expiration and Cough as Means to Early Diagnosis in Tuberculosis. B. L. Taliaferro, Catawba Sanatorium, Va.—p. 347.
107 *Physical Status of Juvenile Delinquents Based on Physical and Clinical Examinations of Children in Reformatories of City of New Orleans. E. Bass and M. Loeber, New Orleans.—p. 349.
108 Advantages of Sanitarian to Railroad. A. E. Campbell, Chicago. —p. 355.
109 Surgical Work at Casualty Clearing Station. T. H. Goodwin, London.—p. 363.
110 Importance of Recognizing Weakness or Obliteration of Conjoined Tendon in Operations for Inguinal Hernia. J. C. Bloodgood, Baltimore.—p. 366.
111 *Rôle of Syphilis in Surgery. G. Gellhorn, St. Louis.—p. 369.
112 Large Multiple Intravescical Adenoma of Prostate. G. F. Lydston, Chicago.—p. 372.
113 Spondylitis Chronica Ankylopoietica. W. Allan and J. W. Squires, Charlotte, N. C.—p. 373.
114 New Tonsil Guillotine. G. Sluder, St. Louis.—p. 380.
115 Some Rare Complications of Acute Mastoiditis with Unusual Symptoms. W. T. Patton, New Orleans.—p. 381.
116 Removal of Foreign Bodies from Eyeball and Orbital Cavity; Report of Cases. D. Roy, Atlanta, Ga.—p. 386.
117 Value of Classics as Part of Studies Preparatory to Medicine. L. F. Barker, Baltimore.—p. 391.

103. **Usefulness of Blood Chemical Methods in Diagnosis of Cardiac and Renal Disease.**—After a rather extended experience with the blood chemical findings in both primary cardiac and renal conditions in their earlier manifestations, and after having been able to check the clinical diagnosis by the so-called retention tests, Gradwohl and Powell tried out these methods in actual practice in a class of severe cases. The blood was taken in the morning before breakfast whenever possible, received into oxalate of potassium, defibrinated, and examinations were made at once. The following methods were used: Marshall for urea nitrogen; Folin modified by Benedict for uric acid; Folin for creatinin, and the Benedict and Lewis for sugar. The necropsy records, when obtainable, corroborated in each instance the blood chemical findings on which the differential diagnosis was made. In the cardiac cases there was practically no increase in the nonproteid nitrogenous constituents, though the urine in each case showed albumin and casts. The renal cases all showed a marked increase in these blood constituents, particularly in respect to one case which had 108 mg. urea nitrogen, 9.8 uric acid, 4.48 creatinin, and 0.148 per cent. sugar. All of the cases showed marked increase in uric acid. The urine showed albumin and casts, just as it did in the cardiac cases By these tabulated figures alone the authors are able to differentiate with exactitude the difference between the cardiac case and that primarily renal. In other words, laboratory data in this mixed group of cases were sufficient to point the way to the correct diagnosis, and the institution of the proper treatment.

107. Abstracted in The Journal, Dec. 22, 1917, p. 2143.

111. Abstracted in The Journal, Dec. 15, 1917, p. 2066.

United States Naval Medical Bulletin, Washington, D. C.

April, 1918, **12**, No. 2

118 Search for Nonphysical Standards for Naval Aviators. R. P. Parsons.—p. 155.
119 Organization and Equipment of Navy Hospital Units. T. W. Richards.—p. 184.
120 Examination of Eight Thousand Five Hundred and Eighteen Men for Meningococcus Carriers, at U. S. Naval Training Stations, San Francisco. P. S. Rossiter and A. J. Minaker.—p. 195.
121 Laboratory Detection of Carriers of Meningococci at U. S. Naval Training Stations, Great Lakes, Ill. C. W. Barrier and R. M. Choisser.—p. 205.
122 Control of Diphtheria Carriers and Suspects, City Park Barracks, Brooklyn. G. B. Whitmore and P. B. Welch.—p. 212.
123 Commissary Work at U. S. Naval Hospital, Mare Island, Calif. R. E. Weaver.—p. 217.
124 Preparation of Colloidal Gold. F. G. Speidel and J. W. Smith. —p. 220.
125 Substitute for Sailor's Hammock. C. P. Kindleberger.—p. 251.
126 Automatic Drinking Cup Sterilizer. W. L. Mann.—p. 253.
127 Handling of Fracture Case at Sea. C. C. Kress.—p. 257.

128 Case of Death Following Injection of Salvarsan. R. A. Bachmann. —p. 262.
129 Case of Syphilis of Lung. A. B. Davidson and E. Callaway.—p. 266.
130 Case of Fracture of Os Calcis. G. S. Whiteside.—p. 267.
131 Extraction of Supernumerary Tooth. W. A. Cauch.—p. 270.

Supplement

132 Field Sanitation: for Members of Hospital Corps Serving with Marines. W. L. Mann.—p. 7.
133 Local Treatment of Burns and Scalds. L. C. Sims.—p. 21.
134 Operating Room. G. F. Cottle.—p. 32.
135 Contagious Case. J. S. Taylor.—p. 37.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

April, 1918, **22**, No. 11

1 Therapeutic Influence of Roentgen Rays on Female Pelvic Disease. J. Phillips.—p. 333.
2 Pharyngeal Pouches. N. S. Finzi.—p. 342.
3 Intensifying Screen; Its Properties and Uses. T. T. Baker.—p. 352.

Brain, London

December, 1917, **40**, Part 4

4 Symptoms of Acute Cerebellar Injuries Due to Gunshot Injuries. G. Holmes.—p. 461.
5 Changes in Electrical State of Body and Their Relation to Nervous System. W. M. Bayliss.—p. 536.

British Journal of Children's Diseases, London

January-March, 1918, **15**, Nos. 169-171

6 Intermittent Fever from Meningococcal Septicemia. A. Netter. —p. 1.
7 Juvenile Consumption and School Attendance. W. C. Rivers. —p. 6.
8 Hemangiectatic Hypertrophy of Limbs—Congenital Phlebarteriectasis and So-Called Congenital Varicose Veins. F. P. Weber. —p. 13.
9 Two Cases of Pneumococcal Meningitis. G. Panayotabon.—p. 18.
10 Clinical Notes on Megacolon. C. G. Cumston.—p. 21.
11 Conditions Simulating Disease Which May Be Produced by Teething. J. Burnet.—p. 26.
12 Primary Sarcoma of Lung. J. P. Parkinson.—p. 28.
13 Herpes Zoster of Arm and Hand in Infant. G. Pernet.—p. 30.
14 Surgical Treatment and Cure of Suppurative Otitis Media Chronica in Childhood. J. B. Horgan.—p. 31.
15 Case of Anaphylaxis. G. H. Waugh.—p. 37.

British Medical Journal, London

April 27, 1918, **1**, No. 2991

16 Selection of Abdominal Cases for Operation. O. Richards.—p. 471.
17 Abdominal Operations at Advanced Operating Center. C. F. M. Saint.—p. 473.
18 Abduction Splint for Femur. D. W. Crile.—p. 476.
19 Method of Citrated Blood Transfusion. O. H. Robertson.—p. 477.
20 *Destruction of Nits of Clothes Louse by Solutions of Cresol Soap Emulsion and Compound Solution of Cresol. A. W. Bacot and L. Lloyd.—p. 479.
21 Simple Hot-Air Appliances for Field Units. C. M. Page.—p. 480.

May 4, 1918, **1**, No. 2992

22 Cerebral Edema (Excess Cerebrospinal Fluid). L. B. Rawling. —p. 499.
23 Removal of Worm (Filaria Loa) from Eye. R. H. Elliot.—p. 502.
24 *Prognosis in War Nephritis. R. G. Abercrombie.—p. 504.
25 Invalid Rations. E. I. Spriggs.—p. 505.
26 Case of Prompt Recovery After Nerve Suture. J. W. Heekes. —p. 507.
27 Special Crutch for Men Who Have Lost Both an Arm and Leg. R. L. Joynt.—p. 508.

20. **Destruction of Nits of Clothes Louse.**—Bacot and Lloyd found that the compound solution of cresol (crude phenol and soft soap emulsion) solutions are decidedly more effective than the cresol soap emulsion solution at the higher temperature but less so at 32 F. The difference in the latter case is not great, and may possibly be largely, if not entirely, a matter of chance, dependent on uncertainty of action at low temperatures. An interesting feature of the series is the regular rise in the percentage of lice which die while hatching as the action of the solutions become less fatal up to a midpoint, when it again declines to a minimum in proportion as the hatching ceases to be checked owing to the weakness of the solutions. It is a matter of question whether death during escape from the egg is due to the action of the fluids on the eggshell, or to a want of robustness in the larvae. The evidence as a whole seems to establish the fact that steeping for twenty minutes in a 2 per cent. solution, either compound solution of cresol or the cresol soap, is quite effective provided the temperature is not below 50 F.

24. **Prognosis in War Nephritis.**—With the aid of the Medical Research Committee the subsequent history has been investigated by Abercrombie in an unselected series of 171 cases of war nephritis. During their initial stage the cases had been under his care in a base hospital in France, to which they were admitted between April, 1915, and February, 1916, inclusive. Their after-histories have been traced until November, 1917—that is, for periods varying from twenty-one to thirty-two months. Their initial stage was an acute illness, exhibiting albuminuria with edema. Six deaths occurred. Thirty-two men were invalided as permanently unfit on account of nephritis, thirty-one were discharged to some form of duty. Of these 131 cases, twenty-two subsequently either relapsed or showed chronic renal symptoms, and were ultimately invalided for nephritis; the remaining 109 showed no further history of the disease.

Glasgow Medical Journal

April, 1918, **80**, No. 4

28 Sympathetic Ophthalmia. J. A. Wilson.—p. 193.
29 Anesthesia in General Practice. J. P. Boyd.—p. 201.
30 *Case of Partial Hereditary Anonychia. F. Charteris.—p. 207.

30. **Partial Hereditary Anonychia.**—Charteris' patient was a man, aged 34 years, who was admitted to the infirmary suffering from trench fever. It was noted that the nails of the thumbs, forefingers and second fingers of both hands were entirely absent, and those of the ring fingers only developed as regards the ulnar half. The little fingers had complete normal nails. A similar condition was present in the toes, the three inner toes lacked nails, the fourth toe had a rudimentary nail, while the little toe was furnished with a normal nail. While the fingers show absolutely no indication of any attempt at nail formation, in the toes there are distinct grooves indicating the nail beds. In the fingers the area normally covered by the nails showed concentric markings, similar to the markings normally present on the palmar aspects of the terminal phalanx. The congenital absence of the nails was a hereditary defect in the patient's family. It could be traced back to his great grandmother; and of his own four children, two show the exactly similar abnormality, while the other two have normal nails. In the preceding generation only this patient showed the family defects, his brothers and sisters having normal nails. The absence of the nails seems to cause little or no inconvenience. Previous to joining the army the patient had been a miner.

Indian Medical Gazette, Calcutta

March, 1918, **53**, No. 3

31 Susruta Samhita. W. D. Sutherland.—p. 81.
32 Hospital Building in India. R. Bryson.—p. 92.
33 Intramuscular Injections of Sodium Gynocardate in Leprosy. P. M. C. Peacock.—p. 95.
34 Natural Painless Childbirth. R. F. E. Austin.—p. 99.

Lancet, London

April 27, 1918, **1**, No. 4939

35 *Agglutination Method of Diagnosis in Triple Inoculated Individuals. H. M. Perry.—p. 593.
36 *Septic Phlebitis Due to Gunshot Wounds. H. Burrows.—p. 601.
37 *Cerebrospinal Fever: Notes on Ninety-Two Consecutive Cases. W. H. W. Attlee.—p. 602.
38 Trench Fever; Condition of Spleen and Leukocytes. D. L. Tate and J. W. McLeod.—p. 603.
39 Eyestrain. A. S. Cobbledick.—p. 604.
40 Restricted Diet of Sedentary Worker. A. D. Waller.—p. 611.
41 War Bread. E. I. Spriggs.—p. 613.

May 4, 1918, **1**, No. 4940

42 General Arteriosclerosis. O. K. Williamson.—p. 627.
43 Some Important Principles Which Determine the Reliability of Wassermann Reaction. J. McIntosh.—p. 630.
44 Wassermann Reaction; Its Use and Abuse. H. W. Bayly.—p. 632.
45 *Acriflavine and Proflavine: Their Use in Infected Gunshot Wounds. R. B. Carslaw and W. Templeton.—p. 634.
46 *Treatment by Brilliant Green of Recently Inflicted Gunshot Wounds. R. Massie.—p. 635.
47 Epidemic Stupor in Children. F. E. Batten and G. F. Still. —p. 636.

35. **Agglutination Method of Diagnosis.**—A large experience of the agglutination test in enteric fevers has made it evident to Perry that the method must be accorded a very prominent position in the laboratory diagnosis of this group of diseases. This is more especially the case since the introduction of preventive inoculation with the triple vaccine. as the isolation of the infecting organism from the blood, feces and urine has become more difficult. An attempt at making a diagnosis on agglutination results by any method other than a repeated and accurate titration of the agglutinin content of the serum, Perry says, does not appear feasible, and the use of standardized agglutinable cultures in this connection is obvious. Regarding the value of the test in all cases, Perry's opinion may be summarized as follows: 1. Positive results: Presuming that the technic is carried out by a skilled and careful worker, a change in titer of 100 or 200 per cent., manifesting itself in a regular curve and reaching its maximum between the sixteenth to the twenty-fourth day (in exceptional cases as late as the thirtieth day) justifies a diagnosis of active enteric infection. 2. Negative results: Cases which are clinically classified as belonging to the enteric group at present occur in which not only do repeated bacteriologic examinations fail to isolate an organism, but in which agglutination readings are so absolutely level or exhibit such slight variation that they afford no help in confirming the clinical diagnosis. Presuming that such are true cases of enteric infection, the failure to confirm the clinical opinion by agglutination findings may be due to one of the following causes: (*a*) Possibly, but not necessarily as a result of inoculation, the character of the infection may be so mild that agglutinins are produced to such slight extent as to cause a variation in titer which is not diagnostic. (*b*) The organism responsible for the infection may be a feeble producer of agglutinins. This particularly applies to paratyphoid A infections. (*c*) The fact that many of these cases have, in addition to receiving a typhoid vaccine, also been inoculated with 4 doses of T. A. B. (typhoid paratyphoid A paratyphoid B) vaccine, may in some way influence agglutinin production.

36. **Septic Phlebitis Due to Gunshot Wounds.**—In connection with the frequency of septic phlebitis consequent on gunshot wounds, Burrows says, one cannot help being struck by the large percentage of cases in which evidence of bronchopneumonia or pleurisy is found postmortem. Among 100 consecutive cases were 25 in which death had followed gunshot wounds of the limbs. Among 24 cases of leg wounds, 10 (41.6 per cent.) had phlebitis, 9 (37.5 per cent.) had bronchopneumonia. Pulmonary infarcts were found in four of the cases in which phlebitis was not observed, although the presence of the infarcts indicates that it was present. This observation bears out the main theme of this paper, that septic infection of veins is, so far as the base hospitals in France are concerned, the chief cause of mortality after gunshot wounds of the extremities. The proper treatment consists in tying the vein at some point above the level of the clot, dividing it below the ligature, and either removing a length of the vein with its infected contents or, if this be not possible, opening the vein freely to afford drainage. Spontaneous recovery may take place, especially if small veins alone are involved.

37. **Cerebrospinal Fever.**—In all but six of the 92 cases analyzed by Attlee was the meningococcus seen in the cerebrospinal fluid and in most cases it was cultivated. In these six the cerebrospinal fluid was turbid and contained many polymorphonuclear leukocytes, and one of the patients died with the usual postmortem appearances in the meninges of cerebrospinal fever. Three of the six were in the Lister series and three in the Pasteur. Thirty-three patients were treated with Lister serum. Of this number 18 recovered and 15 died. Of the recoveries two were completely deaf when evacuated and one was completely deaf in one ear. In none of the others was there any sign of permanent disability. Fifty-two patients were treated with Pasteur serum. Of this number 33 recovered and 19 died. None who recovered had any sign of permanent disability. Seven patients were treated with Lister and Pasteur serums combined. Of this number 3 recovered and 4 died. Of these patients, 4 began with Lister and were given Pasteur afterward, rather as a forlorn hope, and all died, the other 3 began with Pasteur and afterward had Lister owing to a temporary shortage of supply, and all recovered. Of the 54 patients who recovered, 21 were unconscious or delirious on admission and 33 sensible. Of the 38 who died, 23 were unconscious or delirious and 15 sensible. In every case the neck was definitely stiff, and in every patient who was not comatose or moribund on admission Kernig's sign was present at some time or other in the course of the illness. Twelve had rashes, 6 of these recovering and 6 dying. Twenty-two had one or more cranial nerves affected, strabismus being definitely noted in 18. Nystagmus has been quite common. Serum arthritis has been common, most often of the wrists and knees, once of the temporomaxillary joints. It has never needed any active surgical treatment. Urticarial and erythematous rashes have been frequently noted. Two had orchitis during convalescence. One had cyclitis beginning some time before admission on the fifth day of the disease. Only one symptom has been at all constant—headache, generally acute and of sudden onset. Only one sign has been of real help in diagnosis—stiffness of the neck. The greatest number of punctures in any one of the recoveries was 26, of those who died 25. The greatest total amount of fluid drawn off among the recoveries was 1,909 c.c., among those who died 2,127 c.c. The average amount of fluid per puncture in a recovery was 61 c.c., and in those who died, 54 c.c. The average total quantity of serum given each man who recovered was 180 c.c.

45. **Acriflavine and Proflavine.**—An investigation was undertaken by Carslaw and Templeton with the object of ascertaining whether the action of proflavine differed in any way from that of acriflavine. Since October, 1917, a large proportion of the infected gunshot wounds admitted to one hospital have been treated with acriflavine, and the clinica results have been observed in over sixty cases. Proflavine followed by eusol, was used in thirty cases (thirty-two wounds being treated). In all cases 1:2,000 solution in normal saline was used. The rapid improvement in the general condition of patients as shown by subsidence o temperature, pulse rate, etc., and rapid disappearance o pain and of inflammatory edema in the vicinity of wound were very evident. Although the action of acriflavine and proflavine is very similar there can be no doubt that proflavine is slower. The improvement in the general condition of patients is not so rapid. The formation of the fibrinous membrane is not usually complete until the fifth, sixth, or seventh day in contrast with its presence on the third, fourth or fifth day when acriflavine is used. Further, separation of membrane and attainment of a "clean" wound are also slightly delayed. The application of flavine to infected wounds does not render them bacteriologically sterile. Flavine is clearly antiseptic, not disinfectant, in action. There is a complete absence of evidence of damage to tissues when these salts are used in solution not stronger than 1:1,000. There is no necrosis of any of the exposed tissues. These salts are of undoubted value in controlling and preventing the spread of sepsis, as is shown by the rapid improvement in local and general conditions. This object having been gained, there is no advantage in continuing their use, as a condition is reached in which reparative changes are slow, although not by any means absent. Following on the substitution, after a few days, of a more stimulating antiseptic, for instance, eusol, a "clean" wound is obtained sooner than by any other form of treatment known to the authors. There is no evidence of any general toxic effect.

46. **Brilliant Green and Gunshot Wounds.**—Of a large number of cases treated with brilliant green information regarding their subsequent progress was obtained in only forty-six cases. The wounds had, without exception, been received from two to eight hours previous to treatment, and were all severe, with considerable tissue damage. No specia type of case was selected, but it was not used in case involving the peritoneal or pleural cavities, though there seems to be no reason why it should not be so used. Th

solutions used were: (1) 1:1,000 brilliant green in normal saline; (2) 1:500 in normal saline; (3) 1:500 in 0.5 per cent. chloretone. Of the solutions No. 3 was preferred. It appeared to have a definitely analgesic effect, rendering dressing less painful. Wounds appeared to clean more quickly under the stronger solutions. No toxic symptoms were observed in any case. Results were recorded by independent observers and reported, for the most part, by means of Form M. R. C. 1, since it was necessary to evacuate early. When possible a complete excision of damaged tissue was carried out and foreign bodies were removed. In cases of compound fracture all fragments of bone having no periosteal attachment were removed. Damaged tissue is more deeply stained by brilliant green than is healthy tissue. It is useful in this respect when excising the tracks of missiles. All tissue, except skin, which holds the stain of 1:500 solution, should be excised. Brilliant green produces exuberant, but very vascular, bright red granulation. Noticeable features in cases treated with it are the absence of edema and inflammation round the wound and the rapidity with which sloughs and sequestra separate. It is painless in application and does not appear to interfere with the growth of epithelium. For these reasons it may be considered a useful antiseptic, and though it can by no means atone for an incomplete or faulty primary excision it may be used with advantage where anatomic conditions render complete primary excision impossible.

Medical Journal of Australia, Sydney

April 6, 1918, **1**, No. 14

48 Toxic Element in Goiter; Report of Cases. S. Pern.—p. 276.

April 13, 1918, **1**, No. 15

49 Operative Technic and After-Treatment of Senile Cataract Extraction. W. W. Hoare.—p. 297.
50 Prevention of Postanesthetic Vomiting. S. J. Cantor.—p. 299.

April 20, 1918, **1**, No. 16

51 Mycosis Fungoides. J. C. Verco.—p. 319.

National Medical Journal of China, Shanghai

March, 1918, **4**, No. 1

52 Skin Grafting. J. W. H. Chun.—p. 10.
53 Use of Disinfection and Isolation in Epidemics. S. M. Woo. —p. 16.
54 An Inquiry into Some Chinese Sexual Diseases. K. C. Wong. —p. 26.

Sei-I-Kwai Medical Journal, Tokyo

April, 1918, **37**, No. 4

55 Carbohydrate Metabolism in Brooding Hen's Egg. Formation of Sugar Out of Fat in Animal Body. K. Sakuragi.—p. 13.
56 Poisonousness of Immune Serum. T. Yamada.—p. 15.

Bulletins de la Société Médicale des Hôpitaux, Paris

March 1, 1918, **42**, No. 8

57 *Cancer of the Lung. L. Galliard.—p. 201.
58 Secondary Infection of Bile Passages in Spirochete Jaundice. M. Garnier and J. Reilly.—p. 205.
59 *Malarial Hemiplegia. A. Léri—p. 210.
60 *Rachitis in Soldiers. A. Léri and Beck.—p. 215.
61 Isolated Lumbar Rheumatism. A. Léri.—p. 220.
62 Sulphur and Oil in Joint Disease. L. Bory.—p. 221.
63 Nature of Wassermann Reaction. L. Bory.—p. 223.
64 Joint Complications of Meningitis. H. Roger.—p. 225.
65 Acute Nephritis from Mercury. S. Livierato.—p. 229.

57. **Cancer of Lung.**—In Galliard's case the emaciation was explained by the roentgen rays as due to an extensive primary cancer in the lung. There was also partial pneumothorax. Netter has had a case in which the diagnosis was made from small cancerous masses in the sputum. An operation was done for purulent pleurisy and the man survived for a year, confirming the slow evolution of cancers of the lung.

59. **Malarial Hemiplegia.**—Léri reports five cases of hemiplegia developing early in malaria or several years after infection. The hemiplegia was slight and incomplete, and three of the five patients had aortitis. In the other two the hemiplegia had developed slowly and insidiously. The symptoms indicated that the gray matter had been touched. This hemiplegia and the aortitis should be sought for as the fitness for service is impaired by them.

60. **Rachitis in Soldiers.**—Léri and Beck state that in the last few months they have encountered no less than thirty *petits rachitiques* among the men in their service. They describe the various manifestations of this "minor rachitis" which is liable to be overlooked in examining men for the service. Most of such men have outgrown their disturbances from their rachitis, but some still feel the effects, and most of those they have seen had been sent for treatment on account of persisting pains. These pains were never violent, but the dull ache along segments of the limbs hindered or rendered impossible any long march or heavy work. Their whole attitude of body and mind is that of asthenia. Physically and mentally hypotrophic during childhood, they have never thrown this off completely. One man simply refused to get up, saying his bones ached, but no signs of sickness could be found. He did not seem to realize the gravity of his refusal; the idea of the guard-house did not occur to him. His only preoccupation was to be left in repose. These *petits rachitiques* must be regarded as fit for light duty only; they should be transferred to the auxiliary service.

Lyon Chirurgical

January February, 1918, **15**, No. 1

66 War Wounds of Pleura and Lung. J. L. Roux-Berger.—p. 1.
67 *Primary Suture for War Wounds. R. Lemaitre.—p. 65.
68 *War Wounds of the Bladder. F. Cathelin.—p. 109.
69 *Repair of War Wounds of Deep Urethra. V. Rochet.—p. 137.
70 *Transfusion of Citrated Blood. J. Murard.—p. 147.
71 *Infusion of Locke's Fluid with Acacia. H. Delaunay.—p. 211.
72 So-Called Botryomycosis of War Wounds. P. Masson.—p. 230.
73 Actinomycosis and Botryomycosis in Morocco. M. Tussau.—p. 241

67. **Primary Suture of War Wounds.**—Lemaitre reviews the experience of twenty-nine months of primary suture in 2,537 cases of war wounds in the various surgical units of the Ve Armée. He insists that there is no need to cut out more of the tissues in preparation for primary suture than with any other method. What is necessary is to get rid of all devitalized tissues and no more. Curved scissors are far superior to the bistoury, cutting not from the point but at a tangent from their convexity, thus avoiding the reflex contraction of fibrils before the advance of a bistoury. Muscle tissue does not regenerate and hence, he says, it should be economically excised, and never cut across unless absolutely necessary, as otherwise this severs, along with the muscle, the nerve and vessels. The hemostasis must be perfect, not only to prevent hematoma at any price, but to ensure the fixation of the germs under the action of the tincture of iodin. The wound is dried with gauze, tamponing it. As this is rapidly removed, the tissues are swabbed freely with tincture of iodin. Any excess is wiped up with another gauze sponge. When the drying has been properly done, the tissues look as if varnished. The iodin is not needed for small wounds with healthy tissues which do not require excision; and it is not required when the devitalized tissues are removed *en bloc*. He uses a 5 per cent. tincture of iodin in all his work, but would prefer some fluid for the fixation with which there was no fixation of the superficial cells of the wound. This entails a slight oozing, along the filiform drains, of a yellowish serous fluid, evident by the third or fourth day. It retards the healing of the wound by four or five days so that the threads cannot be safely removed until the twelfth or thirteenth day. On the other hand, it offers the advantages that the delayed primary suture can be postponed till the eighth or ninth day or even to the tenth or twelfth. With this iodin fixation we render harmless the germs that have been sown on the surface of the wounds during the operation. This put an end to suppuration in his service.

The only absolute contraindications to a primary suture are infection too far advanced for primary reunion, and so much disturbance in the circulation of blood and oxygen, general or local, as to favor the proliferation of anaerobes in case of suture. In his last series of 1,891 wounds, primary suture was applied in 79 per cent. and in his total cases the method proved successful in all but 0.84 per cent. Only four deaths occurred later, three from injury of the brain and one of the thorax. In the complete failures the streptococcus was always found and usually in those requiring the cutting of one or two stitches. He therefore accepts Tissier's dictum that the streptococcus is responsible for the failures, other things being equal, but the insignificant number of his failures proves that the primary infection with the streptococcus does not inevitably doom the suture to failure. He relies on the clinical findings alone in deciding whether to open up again the sutured wound.

68. **War Wounds of the Bladder.**—Cathelin reports a series of twenty-nine war wounds of the bladder. Such injuries are grave but surgery and the retention catheter generally bring the men through. All his patients recovered except three, two succumbing to their extensive wounds and one dying later from tetanus. Immediate suprapubic cystostomy is necessary when the wound has involved the peritoneum or rectum or both, and when the anterior wall has been perforated. With a wound in the lower part of the bladder, draining perfectly, there is no need for immediate cystostomy unless fever and retention call for it. Under other conditions he prefers cystotomy; he deprecates further any attempt to suture the bladder wall at once unless the wound is intraperitoneal. He emphasizes the importance of having the men empty their bladders before making an assault and during heavy firing. The empty bladder is comparatively well protected by bones.

69. **Surgical Repair of Posterior Urethra.**—Rochet has successfully applied in four more cases of war wounds of the deeper urethra his method of mobilizing the prostate and bladder end of the urethra, and bringing it out by detaching the median perineal aponeurosis from its attachment to the ischium and pubis.

70. **Transfusion of Venous Blood.**—Murard gives an illustrated description of the technic for transfusion of citrated blood with the details of sixty cases, including several from his personal experience.

71. **Saline Infusion with Gum Acacia in Treatment of Shock.**—Delaunay has been using for some time Locke's solution plus 3 per cent. gum acacia in treatment of low blood pressure from hemorrhage and shock. He relates here confirmatory experiences on two rabbits and in three clinical cases. If the vasomotor nervous system has entirely collapsed, nothing seems to do any good, even although the loss of blood may have been comparatively insignificant. The gum acacia seems to act like the lacking proteins in the blood, raising and maintaining the blood pressure by its viscosity and osmotic pressure. But if there has been great loss of blood, it is necessary to precede the Locke by an infusion of physiologic saline or sugar solution to give the heart fluid to pump on, as the mucilaginous Locke solution is not administered in an amount over 150 c.c.

Presse Médicale, Paris

April 25, 1918, **26**, No. 24

74 *Elimination by the Kidneys. L. Ambard.—p. 217.
75 *Sensitized Autovaccines. L. Bazy and L. Cuvillier.—p. 219.
76 *Treatment of Scars on the Face. A. Poulard.—p. 221.

74. **Elimination by the Kidneys in Health and Disease.**—Ambard defines elimination by the kidneys as (1) elimination by effraction, as when a capillary vessel in the parenchyma ruptures; (2) elimination by diffusion, the kidney behaving like an inert membrane to certain substances, eliminating them by diffusion—the proportion in the urine being never higher than in the blood, and (3) elimination by secretion. The latter is of course the most important type of elimination, and it is a process governed by the laws of the secretory constants. (These laws were well explained by McLean in The Journal, Feb. 5, 1916, p. 415.) The most characteristic feature of secretion is concentration, that is, the presence of a substance in the secretion in larger amounts than in the blood from which the substance was taken. Certain substances in the blood have a threshold, while those not needed for the vital processes of the cells, such as urea, ammonia, iodin, salicylic acid and methylene blue have no threshold. Glucose and sodium chlorid, being substances needed by the cells, have a threshold, and the element acting on the kidney is the excess of the substance above its threshold. With a chlorid content in the blood of 6 per thousand, we need consider only as affecting the kidneys, the excess of 0.20 per thousand above the threshold, if it happens to be 5.80 per thousand. [illegible] obinuria, the hemoglobin content of the urine is often much higher than in the blood, testifying to the fact that the secretion, and hence the hemoglobinuria, has to be studied as a secretion. Chabanier's recent research has established that the secretory constant for substances without a threshold is the same for each substance in the same person. For example, if the secretory constant for urea is 0.09 it will also be 0.09 for iodin, methylene blue and the other substances without a threshold. The substances in this group seem to be all solvents of fats, and they all share the same secretory constant for a given person. Hence functional tests of the kidneys with any of these substances will always elicit the identical response, and they can be used interchangeably for the functional tests.

On the other hand, the secretory constant of substances with a threshold is identical with those of substances without a threshold. The thresholds are higher and lower at different times, and this movement of the threshold can be studied with phlorizin, which lowers the threshold of glucose, as is evident by the ensuing glycosuria, and with theobromin, which lowers the threshold of chlorids, and the diuresis of chlorids increases in consequence. The matter of the threshold is thus a very important one in investigation of kidney functioning. The constants may be satisfactory, but if the threshold for chlorids is high, the man will excrete very little chlorids while he will excrete practically all his iodin.

In determining the urea content of the blood, the xanthydrol technic is accurate but it requires such precision in scales, etc., that it is not practicable outside of a laboratory. The hypobromite technic is inexact, but the errors in the blood findings and in the urine balance each other, so that the outcome is dependable if as much as 25 or 30 c.c. of blood is taken for the test, and if the fluids in the ureometer are thoroughly blended. A rubber cot on the finger plugging the tube renders much more convenient this thorough stirring up which has to be done ten or twelve times in the course of fifteen minutes to complete the chemical reaction. The day of the test nothing but a small cup of coffee or tea and one small slice of bread should be taken for breakfast, and the urine for the test tube should be taken between 9 and noon. The bladder should be emptied completely and then again after an interval of an hour or hour and a half if the urine is drawn with a catheter; if not, after two hours.

Among the practical deductions from the ureosecretory constant is that the identity of the secretory constant may afford indications for administration of certain drugs. For example, if the constant with iodin proves to be 0.21, then we know that this person will retain in his blood three times as much iodin as normal. The varying constant may show wide variations in the quantity of sugar excreted in the urine in the glycosuria of diabetes.

Another practical point is the close correlation between the constant and the maximal concentrations. Good concentrating power goes with a good constant. Legueu regards the light thus thrown on the maximal concentration as the most instructive feature of the secretory constants. With a poor concentrating capacity, the slightest oliguria may entail such retention of nitrogen as to prove fatal in a few days. Another practical deduction from the ureosecretory constant is in respect to the evolution of uremia-inducing nephritis. With azotemia of less than 0.50 gm., the deficit in functioning kidney tissue may range from 0 to 80 per cent.; with azotemia of 0.50 to 1 gm., the functional deficit is between 40 and 90 per cent.; with azotemia of from 1 to 2 gm., the deficit is from 80 to 98 per cent. and it is useless in this case to waste time on determining the ureosecretory constant, as prolonged azotemia of 2 gm. dooms the subject to a more or less speedy death. The ureosecretory constant is thus most instructive with azotemia between 0.60 and 0.70, and these form the great majority of cases of nephritis; at this stage the disease is still more or less curable.

75. **Sensitized Autovaccines.**—Bazy and Cuvillier combine the advantages of serotherapy with those of vaccine therapy by sensitizing the vaccine with a polyvalent serum. The immunity conferred develops early, as with typical serotherapy, while it is durable, as with typical vaccine therapy. Their method is to add an emulsion of forty-eight hours'

cultures on gelose to the tube containing the polyvalent prepared serum. The tube is incubated at 37 C. The microbes float on top of the serum until they become agglutinated, when the clumps drop down through the serum and finally lie on the bottom of the tube in a compact mass. The physiologic solution used for the emulsion then clears up and becomes limpid. The fluid is then decanted and the clot of microbes is rinsed carefully to remove all excess of the polyvalent serum. The small viscid mass formed by the microbes thus sensitized by the serum is emulsified in a little physiologic solution so that the emulsion looks like a twenty-four hours' bouillon culture of typhoid bacilli. This opalescent appearance corresponds to about sixty or eighty millions microbes per cubic centimeter. The vaccine is heated three times for an hour to 56 C. The dose is 1 c.c., injected subcutaneously in the thigh, usually repeated at intervals of five days up to three, four or five inoculations. These sensitized vaccines seem to be borne admirably well. Their action has been certain, rapid, harmless and durable. Among the typical cases related to show the efficacy of these sensitized autovaccines is the case of a nurse who had had eighty-three furuncles in the course of four months rebellious to all other measures. After the first injection of the vaccine three large furuncles faded away in less than two days and others starting were aborted. Great improvement in the much depressed general health followed the second inoculation, and the furunculosis subsided completely. Six inoculations were given in this case in the course of three weeks The microbes in this case were a staphylococcus and a pseudodiphtheria bacillus which has been found so common in war wounds that it is used in producing the polyvalent serum Three months to a day after the last injection, two furuncles made their appearance, suggesting that this is the limit of the immunity. As there was some of her autovaccine still on hand, four injections were made, and the recurring furunculosis was aborted. Their success suggests a possible new era for serotherapy made without the heterogenous albumins of horse serum as the carriers of the antibodies.

76. **Treatment of Scars on the Face.**—Poulard makes a deep elliptical incision around the disfiguring scar and then strips off the epidermis over the scar but otherwise does not molest it. The skin is then mobilized around and drawn together across the scar tissue. It is then sutured in a straight line, leaving merely a linear scar. There is no depression or sagging as the cicatricial tissue below acts as a support, while there is no chance for rousing old infection as when the scar tissue is excised.

Revue de Chirurgie, Paris

May-June, 1917, **36**, No. 5-6. Published December, 1917

77 *Projectiles Left in the Mediastinum. R. Le Fort.—p. 495. To be continued.
78 *Functional Value of Stumps. J. Amar.—p. 613.
79 *Projectiles in Neck and Head. M. Patel and M. Arcelin.—p. 640.
80 *Laws of Healing of Wounds in the Skin. A. Lumière.—p. 656.
81 *War Wounds of the Spleen. J. Fiolle.—p. 679.

77. **Fate of Projectiles Left in the Mediastinum.**—This instalment of Le Fort's article fills 117 pages. It is based on thirty-seven cases of foreign bodies in the mediastinum, with healed point of entry, thirty cases of operations on regions contiguous to the mediastinum, and on a number of operations on the mediastinum for reasons other than the presence of a projectile. Most of the wounded with a projectile left in the tissues experience annoying symptoms from its presence, mostly dyspnea on effort, which debars them from work. By observing a number of minor points, which he describes, the foreign bodies can be sought and removed with ease and without harm. No operation on the mediastinum should be considered without roentgen study of the case with all the mechanical aids possible. The access to the mediastinum should be large and ample, and as direct as possible, with integral repair of the wound.

78. **Functional Value of Stumps.**—Amar is director of the physiology of work of the National Conservatory of Arts and Trades, and he emphasizes that the physiologist should be called on to work with the surgeon and the orthopedist, as the aim after an amputation is not so much to restore anatomic conditions as to restore a partially or totally abolished function. The prosthesis should realize the movement with the minimum of fatigue, and the modern methods of physiologic experimentation permit exact valuation of this. The functional capacity of the stump can be thus estimated and classified. We thus appreciate that there are twenty-two different types of mutilations, and the compensating forces aid in restoration of function. The uncompensated functional incapacity is the base on which the pension for disability should be calculated, and the physiologic tests will reveal and evaluate it. They will also reveal the defects of the artificial limb: lack of proper proportions and principles in the making of prosthesis, hence inertia and fatigue; lack of stability and solid anatomic, plastic fitting of the prothesis, hence awkward use and a feeling of insecurity. Most prostheses break at the end of the stump or near the joints. The whole question of artificial limbs needs to be gone over again, working out the chart for each wounded man by the physiologic tests, analyzing the movements by means of moving pictures to calculate the minimal weight of the segments of the artificial limb, the angles of flexion, and the physiologic center of the joint. He has devised dynamographic apparatus for testing the stump of arm and leg, and gives an illustrated description of their application and analysis of the findings.

79. **Prevertebral Projectiles.**—Patel and Arcelin describe the important lessons learned from their experience in extracting projectiles in front of the spine in neck and head in six cases They had only one mishap; the multiple adhesions in this case led to injury of the internal jugular vein in trying to detach the vessel. The hemorrhage was arrested at once by tamponing the lateral sinus. All the patients healed by primary intention.

80. **The Laws of the Healing of Wounds.**—Lumière's experimental and clinical research has apparently demonstrated that large noninfected skin wounds heal according to certain mathematical laws. The healing proceeds at the same rate at the end as at the beginning. The time required is proportional to the size of the area that is to be healed. These laws and the rate of repair seem to apply indiscriminately to different animals of the same species of about the same age and state of health. By heeding these laws we get a standard for comparison of the effects of different methods of treatment, different antiseptics, dressings, etc.

81. **War Wounds of the Spleen.**—Fiolle remarks that the proper treatment of war wounds of the spleen is still open to question. He has found records of forty-four cases, and comments on the usual lack of symptoms at first, or there may be symptoms suggesting peritonitis from perforation. There may be nothing to suggest internal hemorrhage at first, strange to say. It does not become apparent until a few hours or days later, and then usually proves fatal. The hemorrhage occurs early but no symptoms develop from it for a long time. He knows of only one case of spontaneous healing of a bullet wound in the spleen. When symptoms become manifest, then conditions are so grave they generally prove fatal, with a peculiarly rapid and malignant course. Splenectomy is the preferable treatment; five recovered of the seven men treated with splenectomy, and other causes were responsible for the two fatalities. An illustrated discussion of the best mode of access is supplemented by the details of the forty-four cases mentioned.

Policlinico, Rome

April 28, 1918, **25**, No. 17

82 *Divulsion in Treatment of Fistula. B. Masci.—p. 389.
83 *Cystic Point as Sign of Typhoid. G. Genoese.—p. 391.
84 Rhabditis Pellio in Nephritis Urine. M. C. Francaviglia.—p. 394.
85 Freaks of Projectiles. E. Bussa-Lay.—p. 397.

82. **Divulsion in Treatment of Anal Fistula.**—Masci dilated the anus in treatment of fissures and found that this cured not only the fissures but also coexistent anal fistula in his three cases of this kind. The fistula is maintained by the septic environment, the movements to which it is subjected, and the inability of voiding its contents. Divulsion of the anus does away with all three of these factors. He gave first

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INVESTIGATIONS ON SWIMMING POOLS AT THE UNIVERSITY OF MINNESOTA

H. A. WHITTAKER

Director, Division of Sanitation, Minnesota State Board of Health

ST. PAUL

This investigation was undertaken for the purpose of improving the sanitary condition of the swimming pools at this institution. The first experiments were conducted on the pool located at the men's armory and gymnasium, and later comparative studies were made on a pool that had been recently installed at the women's gymnasium.

SWIMMING POOL AT MEN'S ARMORY AND GYMNASIUM

This pool is located on the ground floor of the building (Figs. 1 and 2). It is 59 feet, 6 inches in length, 25 feet in width, and has a water depth of 7½ feet at one end and 3½ feet at the other. The capacity of the pool, when filled to the normal water line, is about 60,000 gallons. The walls of the pool are constructed of reinforced concrete which is covered with white tile. Life rails are provided at the sides and the ends of the pool, and troughs at the sides. As originally designed, the water was admitted to and drained from the pool through a pipe near the floor at the deep end. After the installation of the pressure filters, a separate inlet pipe was constructed to conduct filtered water to the opposite end of the pool, leaving the outlet pipe to serve as an intake to the filters. This outlet pipe is provided with a connection to the sewer. An overflow pipe near the water surface is connected with this outlet pipe, leading to the sewer. The water in the pool is heated by means of a steam pipe which has one connection at the bottom and another near the surface at the deep end.

The water used in the pool is obtained from the public water supply of the city of Minneapolis. This supply is taken from the Mississippi River and is subjected to sedimentation, coagulation, filtration, and liquid chlorin treatment before distribution. Bathers are required to take a shower before entering the pool, and no bathing suits are worn. The bathers are not subjected to a medical examination before entering the pool, but the attendants are instructed to report any suspected or known cases of disease.

FILL AND DRAW METHOD AND HYPOCHLORITE TREATMENT

The first experiments were conducted on the pool while the fill and draw method and hypochlorite treatment were still in use. The water in the pool was changed twice a week. During the process of filling and until the temperature had reached from 78 to 80 F., steam was applied in the manner previously described. Two pounds of calcium hypochlorite were added each evening when the pool was closed for the day. The hypochlorite was administered by means of a hollow brass cylinder with a hose connection at one end and a nozzle at the other. A one pound can of hypochlorite was placed in the brass cylinder after several holes had been perforated in each end of the can. This apparatus was attached to a hose and the water pressure turned on, which scattered the hypochlorite over the surface of the pool. This method did not break up the lumps of chemical, and many could be seen floating on the surface of the water until broken up by the bathers.

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	Number of Tests Averaged	Average Number of Bathers	Pool in Use Since Filling (Hrs.)	Time Between Tests (Hrs.)	Available Chlorin Added to Water (Parts per Mil.)	Bacteria per C.c. (Average)	*B. Coli* Found in C.c. Amounts
City water	3	0	0	0	0	14	0*
City water first day after one day's bathing without treatment	3	65	24	10	0	1,400	1
City water second day after one day's bathing and treated with hypochlorite	4	0	24	24	0.64	3,900	100
City water third day after two days' bathing and hypochlorite treatment twenty-four hours previous	4	65	72	24	0	1,900	1

* B. coli 0 = absent in 100 c.c.

Table 1 includes the results obtained by this method of treating the water in the pool. The laboratory methods used during the experiments recorded in this report are those recommended by the Laboratory Section of the American Public Health Association. The bacterial counts were made on agar at 37 C. (98.6 F.), and the examinations for the *B. coli* group were carried through the "completed test." The pool water was examined for *B. coli* in 0.001 c.c., 0.01 c.c, 0.1 c.c., 1 c.c., 10 c.c., and 100 c.c. amounts. The results show that the sixty-five bathers who used the pool during the first day after it was filled with fresh city water contributed a marked amount of pollution as indicated by the increase in bacteria, and the presence of the *B. coli* group in 1 c.c. amounts. The calcium hypochlorite that was added to the water at the end of the day's bathing reduced the *B. coli* content of the water, a purge, then cleansed the region thoroughly, and the divulsion of the anal sphincter with the fingers was followed by introduction of a large tube wrapped in gauze. Opium was given for five days to leave the anus at rest. Then an oil purge was given, and then opium for three days. By the tenth day clinically normal conditions had been restored. Of course tuberculous fistulas would not be amenable to this treatment, nor when there are complications or extensive destructive lesions, but the cure was prompt and complete in his three cases, including one in which the fistula had developed in a suppurating hemorrhoid. They were all in the sphincter and involved the mucosa and the subcutaneous tissue.

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but did not permanently reduce the bacterial count. This increase in the bacterial count is not unusual under such conditions, for the samples were collected at the beginning of the second day, or twelve hours after the hypochlorite was applied. The hypochlorite probably removed many of the vegetative forms of bacteria and left the spore forming organisms. It has previously been demonstrated[1] in the treatment of Mississippi River water that spore formers develop very rapidly after the removal of the vegetative forms and the hypochlorite has ceased to be active. In view of these facts, the action of the hypochlorite treatment in removing indications of dangerous contamination under the conditions described in the experiment should be interpreted on the *B. coli* results rather than on the bacterial count. The results obtained at the end of the bathing period on the third day, or the day following the hypochlorite treatment, show a marked increase in the *B. coli* content of the water. The reduction in bacterial count may have been caused in part by a retarded action of the hypochlorite on the spore formers. The results of these experiments show that this method of operating the pool does not produce uniformly satisfactory results so far as the sanitary quality of the water is concerned. The method is costly as it necessitates refilling the pool twice a week, and the heating of 120,000 gallons of water to 79° F.

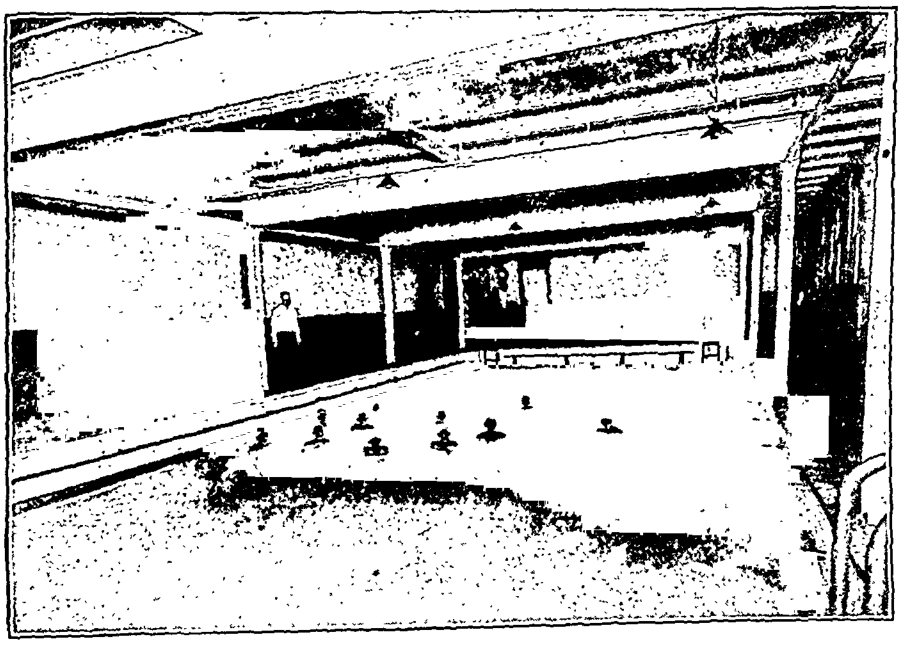
Fig. 1.—Swimming pool at men's armory and gymnasium.

PRESSURE FILTERS

On account of the unsatisfactory physical and sanitary condition of the pool, which resulted from the method previously discussed, pressure filters were nstalled so that the water could be recirculated rough the pool. The filter equipment consisted of entrifugal pump with a capacity of 100 gallons a ute, two coagulant tanks, and two cylindric prese filters (Scaife & Sons). Alum and soda ash were d as coagulants. The maximum capacity of the nt was 144,000 gallons a day, or 60,000 gallons for hours, which is the average length of time the pool use each day. The capacity of the pool is 60,000 ons; therefore, theoretically, the water would be changed during each ten hour day. The plant is located and connected to the pool as shown in Figure 2. Experiments were conducted with the filter plant in operation without any other treatment to determine its effect on the quality of the water in the pool. Table 2 shows the bacteriologic results obtained during four separate tests covering a period of twenty-three days, the plant being operated ten hours each day. It is apparent from the findings that filtration alone gives very irregular bacteriologic results, and that further treatment is required to keep the pool in a satisfactory sanitary condition.

TABLE 2.—RESULTS WITH PRESSURE FILTERS

Number of Test	Pool in Operation Since Filling (Days)	Number of Bathers on Date of Test	Bacteria per C.c.	B. Coli Found in C.c. Amounts
1	1	110	9,200	1
2	2	70	9,000	10
3	16	65	32,000	0
4	23	85	2,300	10

RECIRCULATION, FILTRATION AND LIQUID CHLORIN TREATMENT

A liquid chlorin plant (Wallace & Tiernan Company) was installed as an adjunct to the pressure filters to remove the contamination which persisted after filtration. Experiments were conducted with various amounts of chlorin, as indicated in Table 3. During these tests the pool was cleaned once a week by means of a mechanical cleaning device which consists of a small centrifugal pump driven by an electric motor. To this pump is attached a hose armed at the end with a metallic head. This head is constructed with a narrow slot through which the water and dirt are drawn to the pump and discharged into the sewer. The large particles that may accidentally fall into the pool are removed with hoe-shaped utensils attached to a pole. All bathers took shower baths before entering the pool, and no bathing suits were worn. These results demonstrate that this 60,000 gallon pool can be kept in excellent sanitary condition throughout a ten hour bathing period, during which time 100 bathers may use the pool, provided the water is recirculated through the pool and the filters at the rate of 100 gallons per minute, and 1 part per million of available chlorin is added to the water. Physical and chemical examinations, made on the pool water after three

TABLE 3.—RESULTS WITH RECIRCULATION, FILTRATION, AND VARIOUS AMOUNTS OF CHLORIN ON SWIMMING POOL AT MEN'S GYMNASIUM

Number of Test	Number of Bathers on Date of Test	Available Chlorin (Parts per Million)	Bacteriologic Results		
			Number Samples	Bacteria per C.c.	B. Coli Found in C.c. Amounts
1	101	0.30	3	2,100	100
2	60	0.30	2	2,100	10
3	60	0.30	2	4,000	10
4	66	0.45	2	60	10
5	114	1.00	2	38	100
6	75	1.00	2	2	0
7	105	1.00	2	27	0

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[1] Nasbrook, F. F., Whittaker, H. A., and Mohler, B. M.: The ance of Certain Bacteria to Calcium Hypochlorite, Jour. Am. alth Assn., 1911, 1, 123-124.

days' use without filtration, and after six months' use with filtration and liquid chlorin treatment, are shown in Table 4. On comparing the physical results of the unfiltered and filtered water with fresh city water, it will be seen that filtered water, after three months' use, is in better condition than the unfiltered water after three days' use. The chemical results show an appreciable decrease in the alkalinity and an increase in the amount of incrustants and nitrites at the end of the six month period.

TABLE 4.—EFFECT OF BATHING AND TREATMENT ON WATER IN POOL

Number of Bathers	Treatment at Pool	Time in Use	Physical Exam.			Chemical Examination									
			Turbidity	Color	Odor	Total Hard	Alk.	Inc.	Alb. NH_3	Free NH_3	NO_2	NO_3	Cl.	Iron
0	None	0	0	15	v-1	200	180	20	0.120	0.238	0	0.32	1.5	0
178	None	3 da.	4	30	s-2	200	180	20	0.300	0.332	0	0.48	2.0	0
10,000	Filtration and liquid chlorin	6 mo.	0	7	m-1	200	88	112	0.364	0.108	7	0.16	38.0	0

SWIMMING POOL AT WOMEN'S GYMNASIUM

This pool is located in a semibasement room of the gymnasium building (Figs. 3 and 4). It is 53 feet, 9 inches in length and 24 feet, 6 inches in width. The water depth varies from 3 feet, 6 inches to 7 feet, 6 inches. Its capacity, when filled to the normal water line, is approximately 55,000 gallons. The walls of the pool are constructed of reinforced concrete, and their inside surfaces are faced with mosaic stone. Skimming troughs are provided at the sides of the pool. The pool water is purified by recirculation, a pressure filter, and a liquid chlorin plant. The water purification equipment consists of a centrifugal pump with a capacity of 100 gallons a minute, two coagulation tanks, one cylindrical pressure filter (Scaife & Sons), and one liquid chlorin plant (Wallace & Tiernan Company). The location of this equipment and its connections with the pool are shown in Figure 4. It will be noted that the treated water enters at each end of the pool at the surface of the water, and is removed at a point 10 feet from one end at the bottom of the pool. The water is heated by means of a steam pipe attached to one of the water intake pipes and another pipe used exclusively as a steam inlet. The water used in the pool is obtained from the city supply of Minneapolis.

With the above described equipment in use, the pool is filled once a season, unless it is necessary to drain for repairs, and any water lost through leakage or evaporation is replaced. The bottom of the pool is cleaned once a week with the same apparatus used at the men's swimming pool. The bathers are required to take a shower bath before entering the pool, and bathing suits are worn. The bathing suits are of the trunk type with a short skirt and are made of cotton material.

When the pool was first put in operation, the treated water was admitted at one end of the pool. This was found to be very unsatisfactory, as the water at the opposite end of the pool was not replaced as rapidly as necessary. Bacteriologic results on samples of water collected at both ends of the pool and at the outlet near the center, while this condition existed, are shown in Table 5.

TABLE 5.—RESULTS SHOWING IMPERFECT CIRCULATION OF WATER IN POOL

Sample Collected	Number of Samples	Average Bacteria per C.c.	B. Coli Found in C.c. Amounts
South end near inlet	4	300	100
Center at outlet	4	900	10
North end, 43 feet from outlet	4	1,000	10

A number of tests were made to determine the proper quantity of chlorin to add to the filtered water as admitted to the pool under normal operating conditions. The results of these tests, which are recorded in Table 6, show that one part per million of available chlorin is sufficient to keep the pool water in good sanitary condition for 100 bathers during a ten hour bathing period. The largest number of persons in the pool at any given time during these tests was thirty-five.

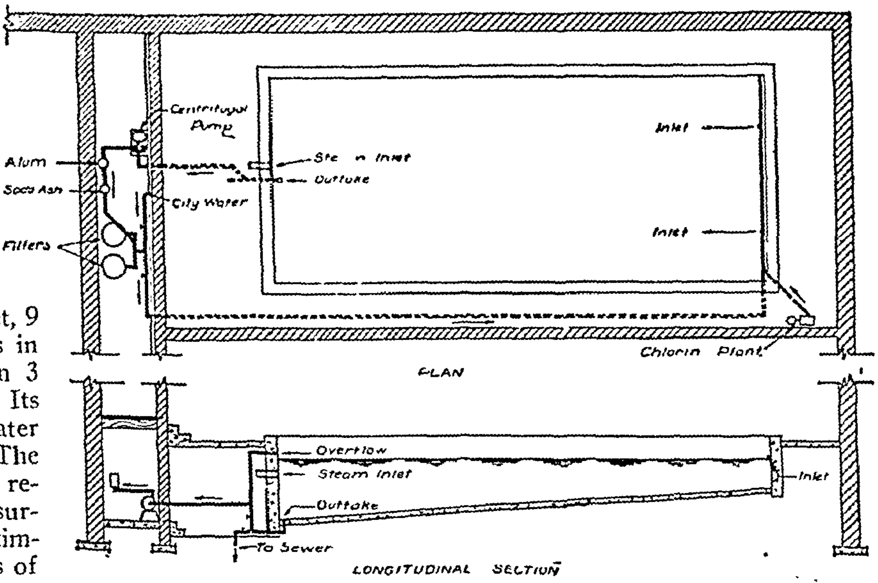

Fig. 2.—Water circulation system of men's swimming pool.

TABLE 6.—RESULTS WITH RECIRCULATION, FILTRATION, AND VARIOUS AMOUNTS OF CHLORIN ON SWIMMING POOL AT WOMEN'S GYMNASIUM

Number of Test	Number of Bathers on Date of Test	Available Chlorin (Parts per Million)	Bacteriologic Results		
			Number Samples	Bacteria per C.c.	B. Coli Found in C.c. Amounts
1	71	0.15	3	600	100
2	35	0.15	2	2,200	0
3	78	0.15	2	3.400	10
4	70	0.39	3	140	100
5	43	1.00	3	4	0
6	110	1.00	2	55	0
7	125	1.00	3	3	0

These results are comparable with those found for the men's pool, and again show that recirculation, filtration and chlorin treatment, when properly carried out, provide a satisfactory means of keeping the water in a swimming pool in a safe condition for bathing purposes.

GENERAL CONCLUSIONS

The results of these experiments show that the fill and draw method, with the daily addition of hypochlorite in the quantities used, did not keep the pool in a satisfactory condition from either a sanitary or an esthetic point of view. Recirculation and filtration improved the physical properties of the water, but did not materially improve its sanitary quality.

Recirculation, filtration and chlorin treatment provide a satisfactory method of keeping the water in these swimming pools in a sanitary condition, provided the detail rules for operation are carried out. The experimental results show that this method will keep the water in a 60,000 gallon swimming pool in a satisfactory sanitary condition for use by 100 persons dur-

ing a ten hour bathing period, the numbe ers
not to exceed thirty-five persons at any on o-
vided the water is recirculated through the e
rate of 100 gallons per minute, and one pa
lion of available chlorin is added to the wate.
parative results on the methods covered b
experiments are shown in Table 7.

TABLE 7.—RESULTS ON METHODS OF OPERATING SWIMMING POOLS

Method of Purifying Water	Average Number of Tests	Pool Emptied	Available Chlorin Added to Water (Parts per Mil.)	Time Between Tests (Hours)	Average Bacteria per C.c.	B. Coli Found in C.c. Amounts
Fill and draw..................	3	Daily	....	24	1,400	1
Fill and draw and hypochlorite	4	Weekly	0.65	24	1,900	1
Pressure filters	4	Yearly	....	24	13,100	1
Pressure filters and liquid chlorin	6	Yearly	1.00	24	20	0

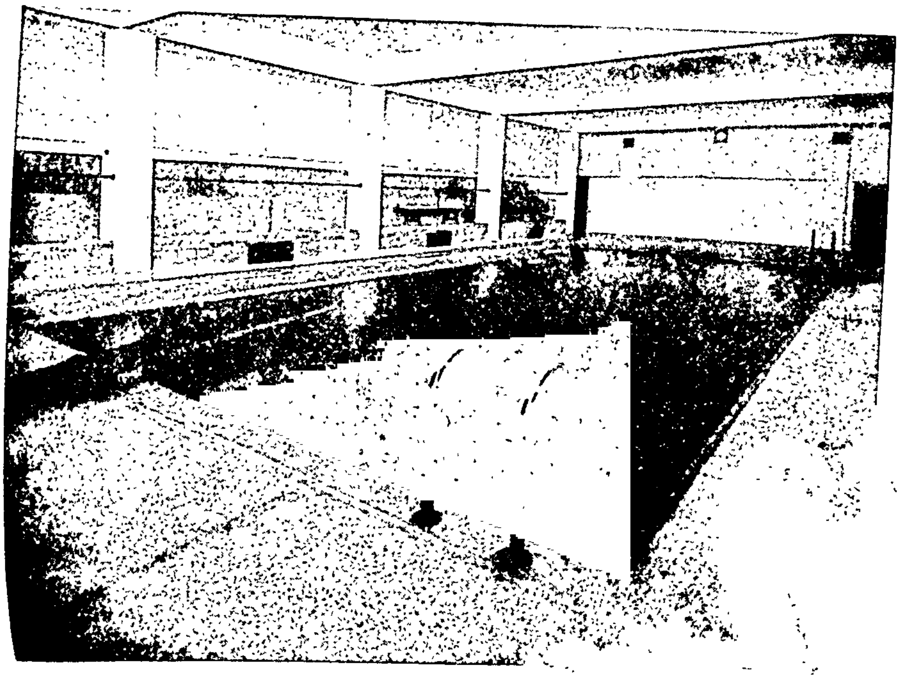

Fig. 3.—Swimming pool at women ium.

RULES TO CONTROL THE OPERATION OF SWIMMING POOLS

1. The general supervision of the swimming pools and their equipment must be assigned to a person who thoroughly understands their operation, and who is provided with the necessary assistance and laboratory facilities for carrying on this work.

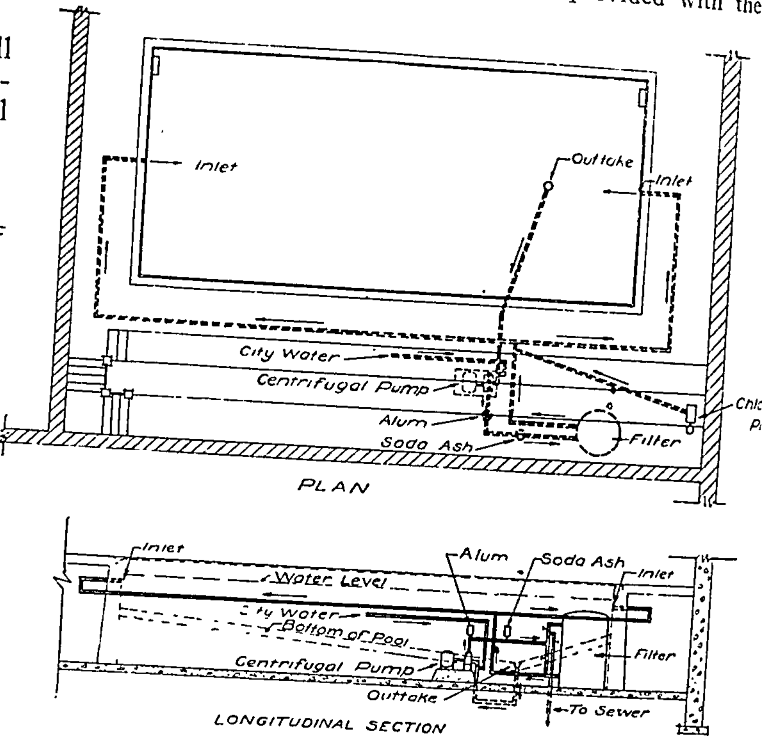

Fig. 4.—Water circulation system of women's swimming pool.

2. The routine operation of the pools must be in the hands of a person especially trained to carry out the detail rules laid down for this purpose and who can keep a daily record of the operating data. (See appended rules for operation and record sheet.)

3. The quality of the water in the pool must meet the following bacteriologic requirements: The bacterial count must not exceed 100 bacteria per cubic centimeter, and organisms of the *B. coli* group must be absent in 10 c.c. amounts.

4. The bathers must be under medical supervision, and all persons suspected of or suffering from communicable diseases must be excluded from the pool. (See appended rules governing persons using pools.)

RULES FOR OPERATION OF SWIMMING POOLS

Pool.—The pool must be cleansed whenever suspended material is present to the extent that is visible to the naked eye. The bottom of
p uld be examined frequently, and
rial left in the pool by the bathers
ed.

lorin Plant.—The filters and
d be operated whenever the
r at least one hour follow-
ove as much suspended
ore it settles to the bot-

T. er the pressure gages
indi is preferable to wash
the f
Chl in amounts corre-
spondi le chlorin. This
amoun that the number
of pers period shall not
ceed

RECORD SHEET

The data for a month may be kept on a blank with thirty-one lines (one for each day) under the captions:

- Year, month, day, hours.
- Plant:
  - Time operated:
    - Start.
    - Stop.
    - Total.
- Filters:
  - Pressure gage reading:
    - Before.
    - After.
    - Difference.
  - Washed.
- Chemicals:
  - Alum, pounds.
  - Soda ash, pounds.
  - Chlorin, parts per million.
- Pool:
  - Filled.
  - Appearance.
  - Cleaned.
  - Temperature.
- Number of bathers.

RULES GOVERNING PERSONS USING SWIMMING POOLS

1. Any person who has been exposed to or is suffering from a communicable disease (typhoid fever, diphtheria, scarlet fever, measles, etc.) should report the facts concerning the exposure to the person in charge of the pool and should not use the pool until permission is obtained from the proper authorities.
2. Every person must take a thorough shower bath with the use of soap before entering the pool.
3. Persons found polluting the water with their body discharges will be excluded from the pool. The trough along the side of the pool is provided as a place to expectorate. Do not expectorate in the water.
4. The water in the pool is purified and is safe for bathing purposes, but is not a drinking water; therefore, bathers are warned against swallowing any pool water taken into the mouth.

REMOVAL OF BRAIN TUMOR

REPORT OF A CASE IN WHICH THE PATIENT SURVIVED FOR MORE THAN THIRTY YEARS

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AND
ALLER G. ELLIS, M.D.
Associate Professor of Pathology, Jefferson Medical College
PHILADELPHIA

HISTORY OF THE CASE

By Dr. Keen

I shall give a summary of the case,[1] and at greater length than I would otherwise do, because it was my first modern brain case; because it shows our technic at that time; because it was one of the earliest operations on such tumors, following by only two years Godlee's in 1885, the very first ever done for a tumor of the brain; and because of the great length of time between the operation and the death of the patient.

History.—T. D., a man, aged 26, first consulted me in May, 1887, at the request of Dr. M. L. Davis of Lancaster, Pa., who furnished me with the following history: When 3 years old the patient fell out of a window, his head striking on some bricks several feet below. The skull on the left side was indented, and (as was disclosed by operation) there was a small fragment of bone detached from the inner table without fracture of the outer table. Evidently the child had struck on the pointed corner of a brick. A scar in the scalp, one-quarter inch long, marks the site of the injury.

He lay motionless for quite a long time as if dead. His recovery was slow, but apparently complete. At intervals, ever since he was 5 years of age, he had had a discharge from the right ear. In 1886 he became partially deaf in the left ear. He had long suffered from frontal headache. In February, 1885, when 24 years old and twenty-one years after the fall, violent epileptic attacks set in. They were followed by intense pain in the head. The attacks took place once or twice a week. By the end of April, 1885, the right arm, leg and face, in succession and in the order named, became paralyzed.

Dr. Davis first visted the patient at the hospital in Lancaster, June 8, 1885. As he approached the hospital he heard him screaming with pain, which was located on the left side of the head. The pain was increased by pressure. The right pupil was dilated and not responsive to light. The left was normal and responsive. Vision in the left eye was good, but in the right eye was imperfect. Aphasia was marked so that he could not converse. The pulse was 60 and irregular; the respirations were 16; there was obstinate constipation and coated tongue, but no fever. Syphilis was eventually excluded. The diagnosis was "pressure on the anterior lobe of the left hemisphere involving the third convolution and extending backward, due to exostosis, tumor or possibly only thickening of the dura." Later and before operation, the diagnosis was more definitely limited to a tumor. The treatment was potassium iodid with arsenic and laxatives.

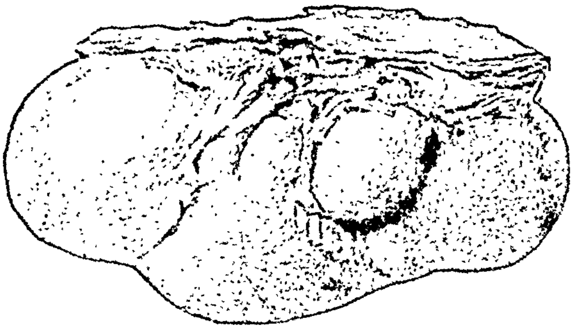

Fig. 1.—Lateral surface of brain tumor, natural size.

The patient's eyesight rapidly failed, and by August, 1885, he had become totally blind, first on the right side and then on the left. In two months his left eye improved sufficiently so that he was able to walk on the street alone. The right eye remained blind for several months, when sight suddenly returned, but vanished in a few hours. This intermittence of vision continued in both eyes. The urine was normal. His mentality was much impaired.

When I first saw the patient, May 30, 1887, in St. Mary's Hospital, Philadelphia, his paralysis had improved so that he could use his arm and walk, though halting very slightly. He was slow of thought and speech, peevish, fretful, and seemed at times dazed. His gait was not spastic. There was moderate deafness, the right pupil was slightly the larger, and the right eye deviated *slightly* outward and upward. The small scar was 3 ¾ inches above the midzygoma and 1 ⅝ inches in front of the interauricular line.

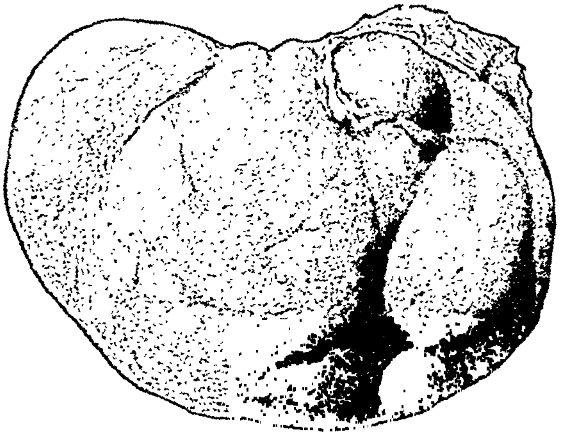

Fig. 2.—Inferior surface of brain tumor, natural size.

June 7, 1887. He had six epileptic attacks while in the hospital, the first since November, 1885. Other attacks the cavity; conclusions, therefore, must be guarded. It would seem, however, that the layer of small pyramidal cells was thinned and the large cells atrophied.

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[1] The full report of the case is given in the Transactions of the American Surgical Association, 1888, and the American Journal of the Medical Sciences, October, 1888.

The pathologic diagnosis was extensive wound of skull and brain exposing almost the whole of the left lateral ventricle; atrophy of the optic commissure and nerves with extensive fibrosis of the latter, and atrophy of pyramidal cells of the cortex.

The point of special pathologic interest in this case is the extensive exposure of the interior of the left lateral ventricle for a period of over thirty years.

The ventricular area of the central nervous system was greatly increased. So far as the clinical history indicates, there was no symptomatology of changed intracranial pressure, either increase or decrease. The fact that the covering of the wound was depressed *when the patient was in the erect posture is anatomic* evidence that the pressure was increased to no appreciable extent, if at all. When the patient stooped and the scalp protruded, the spinal fluid must have accumulated principally in the left lateral ventricular area. This fluid probably even came from around the spinal cord, but apparently without causing any clinical symptoms.

At necropsy there appeared to be no increased amount of fluid, and the depression of the scalp during life was proof that the wound cavity was not filled by that fluid. The case is unique from the standpoint of duration, and to the best of my knowledge of extent of involvement of the lateral ventricle, and we therefore have none with which it may be compared.

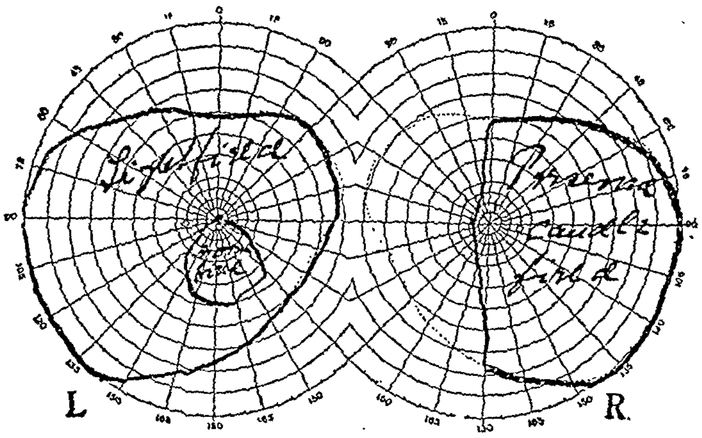

Fig. 7.—Visual fields.

The question arose as to whether the inner surface of the wound became covered by ependyma extending from the ventricle. This proved microscopically not to be the case. According to Weed, however, the ependyma plays a negligible rôle in the production of cerebrospinal fluid, and this would not be important from that standpoint. If, as is generally believed, the fluid is very largely the product of the choroid plexus, the condition obtaining here would be of more importance from the standpoint of pressure than from production of fluid. The case, therefore, was one of longstanding extensive increase of ventricular area of the brain without demonstrable clinical effect.

COMMENT

By Dr. Keen

In the length of life after the operation and the wide open ventricle, this case seems probably to be unique. The only roof to the ventricle was the thin fibrous membrane formed after operation. This was not adherent to the surface of the brain. Therefore, the cerebrospinal fluid had free access to the space between the dura and the pia-arachnoid, as well as to the subarachnoid space.

The cause of the formation of the fibroma, its very gradual displacement downward of the cerebral convolutions with disappearance of the pyramidal cells near the surface and their atrophy deeper down, and the great improvement in the epilepsy have been noted in the history. In spite of his early hemiplegia, the patient was able to walk about for years without a cane and with almost no evidence of any paralysis of leg, arm or face, unless possibly the slight deviation of the right eyeball was a result of the tumor. For one or two years before his death he was confined to his bed because of his increasing general weakness.

The hernia cerebri, and the cuplike depression at the site of the operation when the patient was erect, are shown in Figures 4 and 5. The changed condition from a cup over 2 inches deep to a rounded swelling nearly 1 inch in elevation brought about by muscular compression of the trunk and by the change from the erect to the horizontal position was evidently due partly to the almost instantaneous rush of the cerebrospinal fluid from the other ventricles and from around the spinal cord, and partly to the increase in the blood content of the cerebral veins. This ebb and flow of the cerebrospinal fluid was a most striking phenomenon, the like of which I have never seen in a large experience in cerebral surgery. Even the halting of the breath accompanying the use of the dynanometer, by coughing, etc., would either almost fill up the deep cup by the elevation of its floor, or if continued and with considerable force, would convert the cup into a hill. As in the erect posture the deep cavity was constantly present, it is evident that the total amount of cerebrospinal fluid was less than the normal, yet no cerebral symptoms ever resulted during more than thirty years of postoperative life.

Fortunately, fifteen years ago (Nov. 30, 1903), midway between the operation and the patient's death, Dr. de Schweinitz examined his eyes and gave me the subjoined brief report:

Ophthalmic Diagnosis: Postpapillitic atrophy of optic nerves.

Vision: Right eye, hand movements, eccentric; left eye, $1/30$.

Pupils: Right, 8 mm.; left, 7 mm.; imperfect light reaction.

Muscle Balance: Vertical nystagmus.

Eyegrounds: Right eye, nerve head atrophic; both sets of retinal vessels smaller than normal, and perivascular lymph sheaths distended; numerous yellowish white (colloid?) spots in macular regions. Left eye, similar; less marked shrinking of retinal vessels.

Remarks: The appearances are those of postneuritic atrophy of the optic nerves, in the corresponding loss of direct peripheral vision.

The surgery of the lateral ventricles from this time on interested me very deeply.

Nov. 7, 1888, I read a paper[2] in which I proposed a formal operation to tap and drain the lateral ventricles, an operation which is now almost commonplace, but which then had not been reduced to the exact surgical technic which I formulated.

Jan. 11, 1889, on a boy, aged 4, with a tumor of the cerebellum, I first carried this operation into effect on one side.[3] For certain reasons there stated,[4] February 8, I tapped the opposite ventricle. On the thirty-second and thirty-fourth days after the first operation,

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[2] Keen, W. W.: Med. News, Philadelphia, Dec. 1, 1888.
[3] Keen, W. W.: Proc. Philadelphia County Med. Soc., 1889, p. 50.
[4] Keen, W. W.: Proc. Philadelphia County Med. Soc., 1889, p. 85.

I irrigated the two lateral ventricles from side to side, using 8 ounces of a warm 4 per cent. solution of boric acid. As soon as the warm solution began to flow freely through the brain, the child, who had been a little restless, quieted down, saying "it felt good." The choked disk had measured 2.3 mm. in each eye before the first operation; it subsided six days later to 1.09 mm. on both sides. He died on the fifty-second day.

In the same paper[3] I reported two other cases of tapping the ventricles.

At the International Medical Congress in Berlin, in 1890, I presented a complete paper on the surgery of the lateral ventricles, which was a study of ventricular surgery from the time of Paré to that date. Unfortunately, only an abstract has been published,[3] since the original paper was lost by the secretary of the Surgical Section.

I corrected seven instances of deliberate puncture of the ventricles, with two recoveries.

In fourteen cases of rupture of the ventricles from fracture and secondary opening of them (one of which was the present case), nine patients recovered.

I concluded, therefore, that such involvement of the ventricles was in no wise so dangerous as had been supposed, except when an abscess burst into a ventricle or a large hemorrhage into it took place. Instances of both of these conditions were cited. Every one was fatal.

Among all these and many other cases I did not find any one at all resembling the present one, nor have I ever seen any similar case reported since my paper in 1890.

1729 Chestnut Street.

CHRONIC MYOCARDITIS

A CLINICAL STUDY *

HENRY A. CHRISTIAN, M.D.
BOSTON

Notwithstanding the insistence of many internists and the great interest in functional disturbances of the cardiac mechanism aroused by the information obtained from the use of the polygraph and electrocardiograph, there is still a marked tendency among physicians to stress unduly the importance of valve lesions of the heart. If one glances through the systems and textbooks of medicine, one gains the idea that various forms of valve lesions originating from chronic endocarditis form the chief cause of cardiac disease. The diagnosis and treatment of valve lesions bulk large in the chapters devoted to heart disease.

Scattered through the pages there is ample evidence that in the last analysis, muscle function determines cardiac efficiency or inefficiency, and various forms of chronic degeneration and interstitial inflammation of heart muscle are described. There rarely appears, however, a clear description of a common type of chronic cardiac disorder in which the fault is primarily in the heart muscle, and the valves themselves are normal.

In just the same way, textbooks of pathology fail to give any definite satisfactory description of this common type of cardiac lesion, probably because very often, as we shall see later, the heart muscle and the coronary system present no lesion that the pathologist can describe in objective terms.

A possible reason for this condition lies in the fact that usually the type of case I have in mind is merged with cases of organic mitral lesion under the heading "mitral insufficiency." This results from the fact that with myocardial disturbance, there is in most cases a mitral regurgitation from stretching of the mitral orifice, and such cases usually, though not always, have a systolic murmur at the mitral area.

I do not mean to imply that this type of case is not recognized, for it is, but its frequency and importance are not emphasized adequately. It is not likely that I shall add any new data to the clinician's store of information. What I wish to do is to emphasize the relative importance of a group of cases in which primarily the heart muscle fails and in which the valves are intact in the sense of showing no organic lesion. In describing my own experience with them, I may be able to change the usual views on the relative importance of different types of cardiac disease, and to bring out a somewhat clearer conception of what in my experience is a very frequent type of cardiac disease.

Such cases will be spoken of as cases of chronic myocarditis. This is the term commonly used; but it is a poor term, for it implies inflammation, whereas degeneration in the heart muscle is often found. Still worse for the term, the pathologist can frequently find no signs of inflammation or degeneration. If, however, we understand what is meant by the term, it does not make much difference after all, if it is a poor term in an etymological sense. Had I a satisfactory term to suggest, it is not probable that it would be adopted for general use, for new terms are accepted very grudgingly.

As I understand the present day clinical usage of the term "chronic myocarditis," it means a group of cases in which the heart has failed to function properly and the patient has the symptoms and signs of cardiac insufficiency or decompensation. The disturbance is muscular, for the valves show no organic change. Sometimes at death, an increase in interstitial connective tissue is found. At other times, the heart muscle shows degeneration of varying types. Not infrequently the pathologist is unable to find any lesion in the heart muscle, either in gross or after microscopic study. In some cases, the coronaries are sclerosed; in others they are normal. Not infrequently the pathologist finds no cause for the cardiac failure.

It will be recalled that Cabot, in correlation of clinical and pathologic diagnoses, said that in 52 per cent. of the cases diagnosticated during life as chronic myocarditis no such lesion was found at necropsy, and in only 22 per cent. of the cases did the clinical and the pathologic diagnosis agree. To my mind this merely means that the clinician and the pathologist talk a different language and their terms cannot be compared. The patient dies because the heart muscle fails to do its work. The clinician calls such a condition myocarditis, not meaning necessarily inflammation of the myocardium. That the pathologist cannot find any lesion in the heart muscle does not prove the soundness of the muscle but merely the inadequacy of the methods of pathology as far as they fail to show cause for a functional defect.

According to Cabot, many mistakes are made in the clinical diagnosis of chronic myocarditis when the clinical work is checked by the pathologist. In my own experience from a clinical study of the patient, there are few conditions in which we make mistakes

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* From the Medical Clinic of the Peter Bent Brigham Hospital.

so seldom as in this group of cases. Before necropsy I can say of any of them, "This is a case of chronic myocarditis," meaning thereby, cardiac failure due to myocardial insufficiency without organic valve lesion; and I can prophesy that the pathologist will find an enlarged heart with valves showing little or no chronic endocarditis, that is no thickening or distortion, and the various viscera will show changes subordinate to or secondary to the cardiac failure. Sometimes the heart muscle will show lesions; at other times, not even miscroscopic study will reveal any. Sometimes the coronary arteries will be markedly sclerosed; at other times, they will seem normal. The lesions found in the heart are not at all constant. I was once a pathologist myself, and so the pathologists may pardon my saying that they can offer no satisfactory explanation in an objective sense of what has been observed at the bedside, namely, cardiac failure. Thirteen years ago as a pathologist, I could not satisfy the curiosity of the clinician. Today the pathologist and the pathologic literature are unable to answer my query, "Why has the heart failed?"

CLINICAL OBSERVATIONS

As to the frequency of such cases, in 1917 in my wards at the Peter Bent Brigham Hospital I studied 230 cases of chronic cardiac disease. Of these, 120 were positively diagnosed as chronic myocarditis and five questionably so, while 105 were regarded as cases of chronic valvular disease. Of course among the 105 patients with chronic valvular disease, many had myocardial insufficiency; but this is included in the diagnosis, chronic cardiac valvular disease, and the term "chronic myocarditis" is used only for the patients with cardiac insufficiency, in whom we believe that there is no organic valve lesion. In 1916 the figures were proportionately the same, 156 cases being positively diagnosed as chronic myocarditis and 141 as chronic cardiac valvular disease. In 1915, the figures were 91 and 113, respectively, a total of 367 chronic cardiac cases without organic valve lesion and 359 with organic valve lesion in three years. The diagnosis of simple or uncomplicated mitral insufficiency of organic origin is made relatively infrequently: thus, in 1917, there were ten cases, including three doubtful ones out of a total of 105 with organic valve lesion; in 1916, there were twenty-four cases with seven doubtful ones out of a total of 141, and in 1915 there was a total of twenty-eight out of 113. These figures show an increasing conservatism with regard to diagnosing organic mitral insufficiency. So, looking on chronic cardiac disease from the point of view that I have expressed, in a general adult medical clinic among patients with the symptoms of chronic cardiac disease who are suffering from chronic myocardial disturbance, we see more patients without than with signs of organic valve lesion.

Perhaps our clinic may be unduly conservative in regard to making the diagnosis mitral insufficiency unaccompanied by stenosis. As I have already stated, postmortem examination usually has agreed with the bedside diagnosis in this respect. In forty-two necropsies clinically of this group, the pathologist described very slight thickening of the mitral valve in five and considerable thickening in five, while in thirty-two the valve flaps were not thickened, and the valves seemed in every way normal. Moreover, a study of all our postmortem material, without any reference to antemortem diagnosis, confirms the view that organic mitral disease in older people is relatively infrequent, and when it does occur, stenosis as well as insufficiency is usually present. Dr. Levine, a former assistant,[1] analyzed from our records 247 consecutive postmortem examinations with reference to organic mitral lesions. One hundred and seven, or 41 per cent. of these patients, were over 50 years of age, and of these only two had definite chronic mitral endocarditis, while of 154 under the age of 50, twenty-one had definite chronic mitral endocarditis. This is further justification for conservatism in diagnosing pure mitral insufficiency of organic origin, particularly in older people, in whom we shall see later chronic myocarditis occurs oftenest.

Since the opening of the Peter Bent Brigham Hospital in the spring of 1913, up to Jan. 1, 1918, we have had for study 407 patients, in whom we considered that a cardiac insufficiency was of myocardial origin without organic valve lesion—in the sense of our definition, cases of chronic myocarditis. Of these, 240 were males and 167 females. One hundred and fifteen of these were in the hospital more than once, and many remained in the wards for long periods of time. In all but relatively few there was ample opportunity for careful study of the cases. According to age incidence, the largest number, 143, came in the decade from 51 to 60. In the preceding and succeeding decades, the number was smaller, but about the same number occurred in each of these decades, as shown in the accompanying table. All but forty-one occurred in patients over 40 years of age.

AGE INCIDENCE OF MYOCARDIAL PATIENTS

Age at admission	Male	Female	Total
Below 30	5	4	9
From 31 to 40	17	15	32
From 41 to 50	53	40	93
From 51 to 60	84	59	143
From 61 to 70	52	34	86
Over 71	29	15	44
	240	167	407

ETIOLOGY

The relation of rheumatism and of syphilis to myocarditis is of interest. Of the total of 407 patients, 112 (seventy-four males and thirty-eight females) gave a history of an antecedent rheumatism. Among these, the time relation of the rheumatism to the onset of symptoms showed that fifty-nine had rheumatism within 10 years of their admission for cardiac disease, while thirty had it 25 or more years beforehand. The age of the patients when they had had rheumatism was as follows: from 1 to 10 years, three cases; 11 to 20, ten cases; 21 to 30, sixteen cases; 31 to 40, twenty-two cases; 41 to 50, twenty-one cases; 51 to 60, twenty-three cases; 61 to 70, ten cases; 71 or more, six cases. It is to be noted that sixty out of 112 patients who gave a history of rheumatism were over 40 years of age when they had rheumatism. This makes it improbable that many of these were patients with acute rheumatic fever. Rather it indicates that of those giving a history of rheumatism, more than half in all probability had the arthralgia or chronic arthritis so common in adult ages. This view is further borne out by the fact that of those admitted to the hospital on account of the cardiac decompensation of chronic myocarditis over the age of 50, twenty-nine out of thirty-nine had their rheumatic symptoms within five years of their admission, and many of these a short time before. Few, if any, of these could

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1. Levine, S. A.: Am. Jour. Med. Sc., 1917, 154, 43.

have had acute rheumatic fever. When these deductions are made, it seems probable that only relatively few of our 407 patients with chronic myocarditis could have had acute rheumatic fever, and so rheumatism in this sense played but a small part in the etiology of this group of cases of chronic myocarditis.

As to syphilis, in order to have constant criteria, the Wassermann reaction has been taken rather than a history of syphilis. The possibility of failure to include those who have had syphilis as judged by history, and the possibility of error of observation in the technic of the Wassermann reaction, are fully recognized; but on the whole, the Wassermann reaction would seem to offer the best grounds for estimating the importance of syphilis as an etiologic factor in these cases. Among a total of 369 patients in whom the reaction was tested, the Wassermann reaction was positive in thirty-five and negative in 334. In only thirty-eight patients was it not tested. The small number of patients with positive reaction is very striking when it is recalled that these were in large part public ward patients, among whom the incidence of syphilis as measured by a positive Wassermann reaction is large. In fact as this percentage of our chronic myocarditis patients is a little less than the average incidence of syphilis for all admissions to our wards, this incidence of syphilis might be regarded as a coincidence. Certainly the figures indicate that syphilis has played a very small rôle in the etiology of this group of cardiac cases, a fact that seems surprising when it is recalled how extensive a part vascular lesions play in the syphilitic process.

Alcohol has been suggested as a cause of myocardial insufficiency. Of our patients, 239, or slightly more than half, admitted the use of alcohol; and in 111 of these, there appears to have been a tolerably chronic use of alcohol. In those admitting the use of alcohol over long periods, directly or indirectly, the alcohol may have been a causative factor. Of this there is no definite proof. If a causative factor, it explains slightly more than one third of the cases. As to its real significance in the group, I feel doubtful.

Disturbances in thyroid activity most certainly lead to myocardial disturbance. Goiter or history of hyperthyroidism, however, was extremely infrequent in our cases and could have been a cause in extremely few of them.

Another factor in producing this condition that should be considered is hypertension. Out of 398 patients in whom satisfactory blood pressure observations were recorded, we found the systolic pressure 150 or lower in 148 patients, from 150 to 170 in seventy-two, and over 170 in 178. As far as etiology of the cardiac failure is concerned, hypertension can play a part in considerably less than one half, for it is not likely that a pressure under 170 would be of any great significance in producing myocardial insufficiency and myocardial lesions from overwork. Even in some of these patients, hypertension is probably a coincident, not a causative factor in the cardiac breakdown. Anyhow, hypertension cannot be regarded at most as a very common cause of chronic myocarditis, though it may be expected in a considerable proportion of the cases.

Chronic nephritis has been looked on as a causative factor in chronic myocarditis. Undoubtedly in some cases of hypertension the primary cause of the high blood pressure lies in a chronic renal lesion, and in such the renal lesion may be considered as a causative factor in the myocarditis. As our functional studies of the kidney have shown, however, very often the hypertension is primarily of vascular origin and the renal lesion is secondary to the high blood pressure and underlying vascular lesion. Then in other cases, renal and myocardial disturbance may have a common cause. Again it is not easy to say whether or not nephritis exists in a given patient with myocardial insufficiency. Very often casts and albumin will be found, but their origin may be in large part in the chronic passive congestion of the kidney. In our experience, very often these patients with decreased urinary output, albuminuria and cylindruria show a marked degree of renal efficiency, as indicated by the phenolsulphonephthalein excretion and by a diuretic response to stimulation. That such a kidney shows enough nephritis to have been a factor in the etiology of the chronic myocarditis seems improbable. Examination of our records shows that, in 202 of the total of 407 patients with chronic myocarditis, there seemed enough renal disturbance to justify the diagnosis of chronic nephritis. My opinion is, however, that in many of these the renal lesion was secondary to or coincident with the cardiac rather than causative. Our postmortem examinations usually have revealed a type and extent of renal lesion that is in accord with this view. In seventeen out of forty-one necropsies, the kidneys were free from chronic nephritis, though showing chronic passive congestion. In nine out of the forty-one, the kidneys were of the arteriosclerotic type, while in only fifteen was there definite chronic nephritis. In only the last group would it seem likely that the renal lesion could have had any causal relation to the cardiac; and even in these, the two processes well might have been coincident.

The incidence of arteriosclerosis in the group is more difficult to judge. For its determination we have available routine observations of peripheral arteries, often only the radial. It is recognized, however, that arteriosclerosis is of irregular distribution and may be present in one group of vessels and not in another. Unless it is accompanied by hypertension it would not seem probable that sclerosis elsewhere than in the coronary arteries could have much influence on the heart muscle, and its presence in peripheral vessels is too unsatisfactory an indication of coronary sclerosis to help in forming a judgment as to the condition of the coronaries. So it hardly seems of value to tabulate clinical observations on peripheral arteries as evidence of the condition of the coronaries. Of these cases, however, forty-three came to necropsy, and twenty-one of the forty-three showed quite definite coronary sclerosis, which was moderate in nine and marked in twelve, while in twenty-two the coronary vessels were relatively normal, that is, they showed no sclerosis or only a few patches of moderate change.

Overeating with resultant overweight or a pathologic obesity is usually considered a possible causative factor in this type of heart disturbance. In our group of cases, 188 out of 393 patients appear to have been overweight, and of those a considerable number were obese. From these figures it appears that a little more than one half the patients were not fat in any sense of the word, and quite frequently these patients were of the thin type. My impression is that obesity was not marked enough to have been a possible causative factor in more than one third of the cases studied at the Brigham Hospital, and in these, of course, it may have been only coincident.

The rôle played by focal infection in causing myocardial disturbances is uncertain. Many, in fact very many, of these patients had had bad teeth with marked pyorrhea alveolaris; decayed root stumps and undoubtedly alveolar abscesses were common. We are only too familiar with the rotten mouth conditions of our ward patients, whatever their disease. Bad teeth are common enough in the myocarditis patients to be an important causative factor, but they are so common in all hospital patients that I feel skeptical as to their etiologic relation to the myocardial group.

In the heart muscle the pathologist found an increase of interstitial connective tissue in twenty-seven out of forty hearts carefully described. Here examination was not exhaustive enough to exclude smaller foci of connective tissue increase, and in the twenty-seven in which it was found the connective tissue very often was only moderately abundant, or the definite patches occupied only a small part of the myocardium. Very often, too, as much or more connective tissue is found in the hearts of older people who, during life, gave no sign of cardiac insufficiency. So, after all, these foci of connective tissue may have no causative relation to the insufficiency. In eight hearts the muscle seemed normal, while in four only moderate fatty degeneration was seen. In one case amyloid degeneration was present.

Electrocardiography is an important method of determining cardiac disturbances which indicate myocardial lesions either functional or organic. In the 407 cases of this group, electrocardiograms were made on 328 patients, with the following results: Thirty patients showed normal curves. Simple left-sided preponderance occurred in eighty-three patients, and right-sided in ten. Thirty-eight patients showed left-sided preponderance with premature or ectopic contractions oftenest having origin in the ventricles, while only one showed right-sided preponderance with ectopic beats. This is as might be expected, 121 with left-sided hypertrophy in contrast with eleven showing right-sided hypertrophy. Sixteen patients had ectopic beats without showing the complex of either left or right-sided muscle preponderance.

Auricular fibrillation occured in ninety-six, and auricular flutter in nine patients. In these, with very few exceptions, left-sided muscle preponderance occurred. In many, ectopic beats were also present. In forty-one cases the electrocardiogram showed the widened or distorted ventricular complex, indicating disturbance in the conduction mechanism, either block in the right or left main stem or more probably degeneration changes involving smaller subdivisions of the conduction system. Here only, more marked changes in the ventricular complex were counted. Slighter degrees of widening or distortion of ventricular complexes occurred in other patients. These are undoubtedly of considerable significance, and will be discussed in a paper by Dr. Howard F. West.

Paroxysmal auricular tachycardia occurred once, paroxysmal ventricular tachycardia once, and sino-auricular block once. In two cases, complete auriculoventricular block was the chief disturbance noted. The patients with auricular fibrillation, auricular flutter and distortion of the ventricular complex, 146 in all, represent from an electrocardiographic point of view the patients with the most serious muscle disturbance, and they form a considerable proportion of the total of 328 studied electrocardiographically. The finding of these changes in the electrocardiogram helps in the diagnosis of this type of case, but it is evident from our figures that often the electrocardiogram shows no change indicative of serious myocardial disturbance, even in patients with badly decompensated hearts; for almost every one of our patients was of the type requiring hospital bed treatment and so represented advanced steps of the disease. Unfortunately our records do not contain enough polygraphic tracings to justify any opinion as to the frequency of pulsus alternans in this group of cardiac disturbances.

Physical signs in these patients are quite characteristic, though there are no pathognomonic signs. The heart is usually enlarged, often markedly so. Hypertrophy occurs by far the most frequently in the left ventricle. Cardiac sounds are not characteristic. Gallop rhythm and tic tac quality are found, but frequently they do not occur. A systolic murmur is frequent, usually loudest at the apex. It varies all the way from a soft blowing murmur to a loud and harsh, or a musical one. In some cases no murmur is heard. In my opinion, the quality or intensity of the murmur is no criterion as to whether there is an organic valve lesion or merely a dilated valve orifice. In the same way transmission of the murmur is of no significance. Given an enlarged heart and any sort of a systolic murmur at the apex in a patient over 40 with decompensated heart, the probability of there being an organic mitral insufficiency is very small. In my opinion, the systolic murmur is the least significant physical sign in this group of cases. The apex impulse usually is diffuse, often not forcible. Very often there is a marked discrepancy between visible pulsation and the palpable heave of the apex region. It is surprising sometimes to feel so weak a thrust from a heart markedly enlarged and to the eye beating forcibly. With the heart condition goes the sign of decomposition—chronic passive congestion of the viscera and edema.

Roentgen-ray silhouette of the heart is not characteristic. Most often it shows well the left-sided enlargement. A number of times, I have seen the heart shadow of a globular form. These hearts are sometimes diagnosed by the roentgenologist as pericardial effusion.

With rest in bed and digitalis, the patients can make most surprising improvement. It is a group in which digitalis is very efficient, whether auricular fibrillation is present or not. Diuretics here have their most efficient action. A waterlogged patient of this group may lose 20, 30, 40 or even 60 pounds of fluid in a week's time and have most of his symptoms disappear. Of course there is a marked tendency for them to recur, especially after return to work; and with recurrence, cardiac response to digitalis becomes less, until the stage is reached when under digitalis the heart progressively deteriorates and no therapy will stay the progress of the disease.

As to what really produces this type of cardiac insufficiency we are ignorant. Various theories have been advanced to explain how minor lesions by position might lead to serious cardiac disturbance. After critical examination these theories, however, seem unsatisfactory. Our clinical studies fail to show any constant cause, and in some cases even after careful pathologic study, the condition of the heart remains inexplicable. Further study of these patients during life and after death is certainly needed before we can have any adequate understanding of the mechanism and the causes of the condition.

SUMMARY

There is a common chronic cardiac condition, in a general hospital for adults equal in frequency of occurrence to chronic valvular disease of the heart, which, for want of a better term, may be called chronic myocarditis. By this term is meant cardiac insufficiency from myocardial disturbance without organic lesion of the heart valves. A very large proportion (366 out of 407) of these patients on admission to the hospital, are over 40 years of age, and somewhat more are men than women. The heart is nearly always enlarged, and usually there is a systolic murmur at the apex; but whatever its intensity or transmission, it is very rare to find any thickening or distortion of the valve flaps or chorda tendineae. Acute rheumatic fever and syphilis are both relatively uncommon in these cases, and neither plays any considerable part in the etiology. Chronic use of alcohol occurs in about one third of the cases. High blood pressure is often found, but is absent in more than half of the cases. Chronic nephritis is often present, as is hypertension; but in seventeen out of forty-one cases at necropsy, the kidneys showed no chronic nephritis. Coronary sclerosis is an important factor in only about half of the cases. Increase of interstitial connective tissue is the lesion most found in the heart muscle, but in numerous cases the heart muscle seems practically normal except for hypertrophy of the fibers. Electrocardiography often gives evidence of disturbed muscle function. About half the cases show auricular fibrillation or flutter or the distortion of the ventricular complex, indicating some disturbance in the conduction system; but in even advanced cases the electrocardiogram often shows no significant disturbance. Digitalis in the earlier breaks in compensation is a very efficient drug, and diuretics produce marked diuresis.

HYPERTROPHIC PYLORIC STENOSIS IN A TWO YEAR OLD CHILD

REPORT OF A CASE *

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In a survey of the literature for cases of hypertrophic pyloric stenosis, we find very little mention of cases after the second or third month. The first reported case is the famous one of Beardsley,[1] in which a boy showed symptoms shortly after birth, and up to his death at the age of 5 years.

Shaw and Elting[2] in 1904 reported a case in which the patient showed symptoms from the seventh or eighth month but was not operated on until the age of 16 months. The child lived.

Arreger, quoted by Osler,[3] reported a case in a child of 5 years, and Rosenheim, quoted by Holt,[4] reported a case in which the patient had had no symptoms until he was 3 years old, and at the age of 5 years had had the first marked symptoms. He had not been operated on, however, until he was 6½ years old.

All the references mention cases occurring at the usual age, or in young adults. Therefore, I thought my case would be of interest, because of its rarity, but I offer no hypotheses or theories.

REPORT OF CASE

J. B., a boy, aged 22½ months, Jewish, was brought to the observation cottage of the county hospital, July 22, 1917, with a complaint of vomiting, loss in weight, and extreme restlessness.

He was the youngest of five children, the first of whom had died when 3 days old, the mother having convulsions. The second child, who was 8 years old, was well, but not strong. The third had died "of abscess in the head" at the age of 21 months. The fourth, who had been bottle fed, had died at the age of 5 months. The mother had died from tuberculosis three months previous to consultation, aged 26. The father was living and well.

The first three months at home, the child had been fed oatmeal water and cow's milk. There had been no history of vomiting. The child had had some colic, but had seemed healthy and strong, and had gained in weight. There had been a good deal of constipation, but milk of magnesia had corrected this. Then the child had been put out to board with two or three different women. When 10 months old, he was very skinny, and had a good deal of gas. He was teething at the time, and vomiting a little, but gained rapidly in weight under careful diet. No further trouble had occurred until he was about 15 months old, when he was given a banana, which he had vomited. During these months he had whooping cough. He had been in the Jewish Orphans' Home for a time, but there had been no history of vomiting there. About a month before I saw the child, he had become nauseated one evening after supper. A physician from the neighborhood was called, who gave him a hypodermic injection to produce vomiting. The next day the child was taken to the Children's Hospital, where he was kept for three days. He vomited occasionally, but developed no serious symptoms, and no diagnosis was made. After going home, he was well for two days, when he started to vomit again. Another physician saw him a few times, and advised that he be taken to the county hospital. No diagnosis was made on this occasion. At the hospital it was learned that three weeks previously, the child had been seen chewing firecrackers, but whether or not some of them had been swallowed was not known.

Physical examination was negative except in the abdomen, which was scaphoid with visible peristaltic waves, but with no palpable tumor. While in the observation cottage at the county hospital, a fluoroscopic examination was made, but nothing was seen to pass through the pylorus.

Tincture of belladonna, 4 drops every four hours, was ordered, and 4 ounces of undiluted milk once in from three to six hours. Sometimes this was retained and other times vomited. Nutritive enemas were given, some being retained and some not. The temperature varied from 101 F. on entrance, to normal.

When the child was transferred to the children's ward, July 25, three days after entrance, the same findings as in the observation cottage were noted.

Stomach washings of soda followed by gavage of barley water and egg albumin every six hours gave relief, and the food was retained. The first washing brought up a greenish brown fluid with a foul odor. After some of the washings, only half as much water was returned as was used in the washing, at the other times nearly twice as much. The gavages at first seemed to satisfy and quiet the child, but later they did not. The enemas brought forth small, brown, liquid stools. The child kept getting weaker, and on the twenty-eighth day, three days after entrance to the children's ward, and six days after entrance to the hospital, it was deemed advisable to operate. Dr. Henry Dietrich saw the patient in consultation, and concurred in pronouncing the case operable, but reserved his diagnosis.

The operation, performed at 7:30 o'clock p. m., July 28, by Dr. W. L. Huggins, revealed a typical hypertrophied pylorus such as is seen in congenital pyloric stenosis. Expos-

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* Read before a clinical staff meeting, at the Los Angeles County Hospital, May 6, 1918.

[1] Beardsley, H.: Arch. Pediat., 1903, **20**, 355.

[2] Shaw, H. L. K., and Elting, A. W.: Arch. Pediat., 1904, **21**, 892.

[3] Arreger, quoted by Osler, William: Modern Medicine, 1908, 5, 304.

[4] Rosenheim, quoted by Holt, L. E.: Hypertrophic Stenosis in Infants, The Journal A. M. A., May 26, 1917, p. 1517.

ing the pylorus, the incision was made longitudinally down to the mucosa (Rammstedt), and revealed the same cartilaginous texture seen in typical hypertrophic pyloric stenosis. The mucosa was accidentally nicked at the stomach end, so a pair of forceps were inserted in the pylorus, but nothing was found to account for the obstruction other than the thickened tissue. The closure was a modified pyloroplasty and the usual abdominal tier closure.

The child was returned to bed in a fair condition, but with a very weak pulse. The rectal drip of glucose and sodium bicarbonate was started. The child vomited some greenish yellow fluid and was very restless. The drip was repeated during the night. The restlessness increased.

At 5 a. m. the following day, the temperature was 101.6; the pulse 106, and respiration, 78. At 8 a. m. the temperature was 106.2, the pulse 180, and respiration 84. At 11 a. m., the pulse was very weak. The temperature was 104.6, the pulse 180, and respiration 80.

Five hundred c.c. of physiologic sodium chlorid solution were given by hypodermoclysis. The child died at 1 p. m. No postmortem was held.

COMMENT

The operative findings were very much of a surprise, as clear symptoms of pyloric stenosis are very uncommon in children the age of this one. Children are difficult subjects on whom to do a fluoroscopy, as they are usually very restless and easily frightened.

I feel that if the operation had been done sooner, before such a marked state of exhaustion had taken place, we might have saved the child; but we delayed too long. On the other hand, he seemed somewhat improved with the washings and gavages, and we thought we were dealing with a pylorospasm.

Medical history records cases in which pyloric stenosis has been found by the operator on opening the abdomen for other conditions. The fact that there have been a number of cases reported in young adults shows that the condition may obtain for months or years with very mild symptoms, or none at all.

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REPORT OF A CASE OF PSEUDOLEUKEMIA INFANTUM (VON JAKSCH'S DISEASE)

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Since von Jaksch first called attention to the association of splenomegaly with anemia in children, a number of similar cases have been studied under the name of von Jaksch's disease. But as most of the cases reported differ in their clinical features and pathologic findings, the existence of the condition as a distinct disease of the blood is still a matter of dispute. Pseudoleukemia infantum is now defined as a rare disease of childhood, characterized by a severe anemia, marked enlargement of the spleen, some enlargement of the liver, and a chronic course with one or more relapses. The anemia is the most constant feature of the disease. It presents the combined blood picture of pernicious anemia and leukocytosis or lymphocytosis. While splenic enlargement is said to be an important diagnostic finding, it cannot be so considered in this country where chronic malarial spleens are common among the children. The more common children's diseases, notably rickets, gastro-enteritis, and to a lesser extent hereditary syphilis, are found in association with von Jaksch's disease. This has caused some observers to attach etiologic importance to these diseases; but the matter has yet to be proved.

REPORT OF CASE

History.—W. B., boy, aged 2 years, born in Panama, of Martiniquan parents, admitted to Hospital Santo Tomas, Jan. 4, 1917, with a history of diarrhea, drowsiness, vomiting, loss of appetite, general weakness and a gradual change in color, which the mother described as "turning yellow," had been ill for an indefinite period, probably several months, but the condition became aggravated, a few days prior to admission, with cough and fever. The past medical and family histories were negative. The temperature on admission was 40.2 C. (104.3 F.); pulse, 130, and respiration, 36.

Physical Examination.—The patient was well developed. He appeared to be comfortable but was somewhat dull and unresponsive. Slight scleral jaundice was present. All superficial lymph nodes were enlarged. The head was square with the anterior fontanel open. The mucous membrane of the lips and mouth was of a peculiar yellowish pallor. There were but five upper teeth, no lower teeth being present. Nodular projections were found on both sides of the costrochondral junction. There were some scattered, moist râles over both lungs. The heart was negative. The upper limit of splenic dulness extended to the sixth interspace in the midaxillary line. The lower border of the spleen extended 1 inch below the left costal border in the anterior axillary line. The lower edge of the liver was palpable half an inch below the right costal border. The lower extremities showed a moderate degree of bow-leggedness. The knee jerks were increased.

Laboratory Reports.—The urine was negative. The stools showed a few pus cells; otherwise they were negative. Blood examination, Jan. 6, 1917, for which deep puncture and some pressure were necessary to obtain a fair sized drop, revealed: erythrocytes, 1,440,000; leukocytes, 22,000; hemoglobin, 25 per cent.; color index, —1; differential count: polymorphonuclears, 42 per cent.; small lymphocytes, 37 per cent.; large lymphocytes, 8 per cent.; large mononuclears, 8 per cent.; transitionals, 4 per cent.; mast cells, 1 per cent. Poikilocytes, nucleated reds, both large and small; stippling, etc., were present in large numbers. No malarial organisms were found. Repeated blood examinations showed the average number of erythrocytes to be about 1,600,000, with many nucleated cells and other pathologic elements. The leukocytes varied in number from 22,000 to 25,000, of which about 50 per cent. were lymphocytes. The fever was at no time affected by quinin.

Clinical Course.—There was no change in the patient's general condition for the following ten days. During that time, the temperature was of a septic type, at times, reaching as high as 40 C. (104 F.) in the evening with a daily variation of from 2 to 2.5 degrees C.

January 14, slight improvement was noted. During the following twelve days the temperature remained approximately normal. The general nutrition was improved and the jaundice practically disappeared.

January 18, the erythrocytes numbered 3,200,000, the leukocytes 8,000. Nucleated reds were rare, but stippling and poikilocytosis persisted to some extent.

January 25, a relapse to the original condition occurred.

February 16, the child was in a semiconscious state, scleral jaundice being deeper than at any time during the disease. Respiration was rapid, with numerous, moist râles on both sides of the chest. The abdomen was distended with easily detectable flank dulness. Blood examination at this time revealed nothing unusual, except that the leukocytic count reached the high mark of 42,000.

Throughout the course of the disease it was observed that any improvement in the child's condition was accompanied by an increase in the number of erythrocytes and a diminution in the pathologic elements of the blood and in the number of leukocytes, whereas a relapse was followed by an increase in the number of leukocytes and a decrease in the number of erythrocytes. This would indicate that both the anemia and the leukocytosis were due to the same pathogenic agent.

Feb. 18, 1917, the child died.

Necropsy Report (2584).—The body was that of a well nourished child about 3 years of age. A mucopurulent fluid was running from both nostrils; the tonsils were not enlarged; five upper teeth, and no lower teeth were present; the sclera of both eyes was jaundiced; the muscles were well developed.

Abdomen: A small quantity of a straw colored fluid was present in the abdominal cavity. The appendix was normal. The urinary bladder was distended. The stomach was small and contracted. The mucous membrane was covered with a whitish mucoid material. The rugae were prominent and obliterated with difficulty. The gallbladder was distended, but emptied easily. There was no evidence of any peritonitis.

Thorax: When the sternum was removed, the lungs collapsed. The right lung had four lobes and the left three. Both lungs crepitated throughout and contained no tubercles. The lower lobe of the left lung was congested. On section it was edematous, and the bronchioles contained a yellow purulent fluid. This lobe appeared to be jaundiced. The middle lobe was deeply congested and appeared to be pneumonic. The cut sections sank in water. The lower lobe had the appearance of bronchial pneumonia.

Heart: This was enlarged, and the right side was dilated and filled with a goose fat clot. The musculature was flabby. The pericardium was edematous.

Spleen: This was enlarged, firm and deep blue. The capsule could not be stripped easily. The pulp was very dark red and not very friable. The normal markings were absent.

Kidneys: These were slightly enlarged, and pink. The capsule stripped easily, leaving a smooth surface. On section the organ was yellowish pink. The cortex was about normal in size. Around the papillae there was a zone of yellowish discoloration.

Liver: This was normal in size, and brownish. On section the tissue was markedly bile stained. The hepatic vessels were engorged with blood.

Head: The anterior fontanel was open. When the calvarium was removed, fluid ran out. The cortex was markedly edematous, very soft, flabby and anemic. The ventricles were filled with a clear fluid.

Anatomic Diagnosis.—The diagnosis was: marked anemia of the brain; bronchitis; left sided bronchopneumonia; congestion of the liver; splenic tumor, and general anemia.

The pathologic report of the Board of Health Laboratory, Ancon Hospital, was as follows: There was an extreme fatty metamorphosis of liver, kidney and heart. The blood sinuses of the liver, spleen and kidney contained an abundance of micro-organisms that were, perhaps, postmortem invaders. There was passive congestion of the liver and spleen. No spirochetes were found in any of the tissue. Nothing was found to indicate the etiology of the disease present.

Treatment.—In addition to the general hygienic measures, quinin, solution of potassium arsenite (Fowler's solution) and syrup of ferrous iodid were given a fair trial but proved useless.

Balance Between Food Fuel and Work.—A British scientific commission has reported that if the workman be undernourished he may, by grit and pluck, continue his labor for a certain time, but in the end his work is sure to fail. It makes no difference what the nutritive condition of the person is, if a certain job involving muscular effort is to be done, it always requires a definite amount of extra food-fuel to do it.—Lusk, Food in War Time.

Military Medicine and Surgery

AGGLUTININ RESPONSE AFTER ARMY TRIPLE TYPHOID VACCINATION *

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The efficiency of typhoid vaccination in the United States Army, as developed by Colonel Russell, is now a matter of history. That typhoid inoculation results in the production of an effective immunity over a considerable period of time has long since been proved, both experimentally and clinically. On the one hand, agglutinin and bactericidal experiments, and on the other, the vital statistics of the Army since the typhoid inoculation became an order, are quite conclusive.

The history of paratyphoid and the mixed inoculations is now being made. There is little reason to doubt that they will be as successful as the typhoid inoculations. To determine to what extent specific agglutinins for the three types of organisms used by the Army were produced by the men inoculated, at the suggestion of Lieutenant-Colonel Whitmore, the series of cases here summarized were studied. The series included men who had had no typhoid or paratyphoid and no vaccination, and men who had had the commercial vaccine, either typhoid or mixed, at a variable time previous to the Army vaccination.

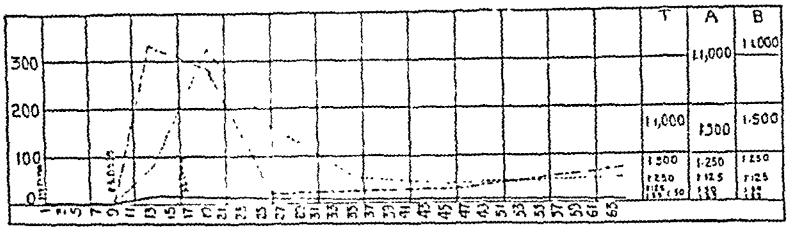

Chart 1.—Typhoid vaccine, June, 1915. Mixed commercial vaccine, July, 1916. Army vaccine, September, 1917. First injection, slight headache, slight local reaction; highest temperature 99 F. Second injection, severe headache, nausea and vomiting, slight diarrhea, slight pain in abdomen; local reaction slight; highest temperature, 103. Third injection, headache, dizziness, with slight local reaction; highest temperature, 102.6. In the charts the solid line represents typhoid, the line of dots and dashes paratyphoid A, and the line of short dashes paratyphoid B.

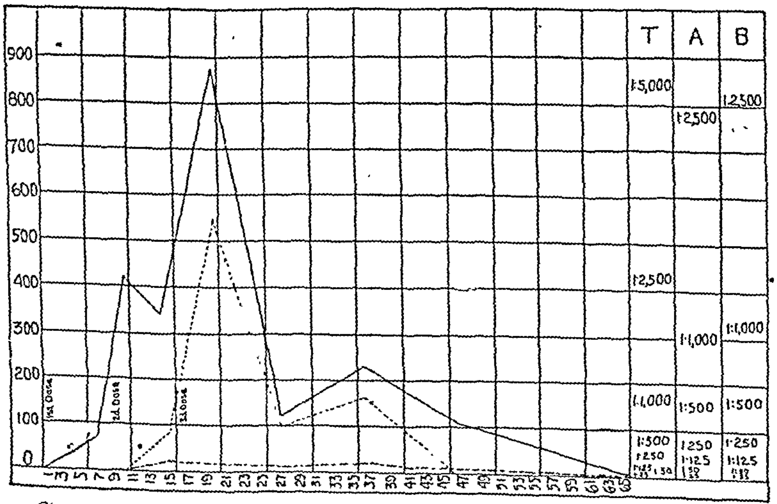

Chart 2.—Triple commercial vaccine, 1916. Army vaccine, September, 1917. First injection, no general reaction, slight local; highest temperature, 99 F. Second injection, no general, slight local reaction; highest temperature, 99.2. Third injection, no general, almost no local reaction; highest temperature, 99.

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* From the Department of Pathology, Army Medical School.

This work, then, demonstrates that agglutinins are produced, not only for typhoid, but for paratyphoid A and paratyphoid B as well; it offers an opportunity to see the relationship between local and general reactions, and the antibodies produced; it offers an opportunity to study the bearing a previous inoculation has on the production of agglutinins.

The accompanying charts are almost self-explanatory. They are the more typical and instructive of a group of thirty, and represent graphically the variations of the typhoid and paratyphoid agglutinins under the influence of antityphoid vaccination, as formerly and at present administered by the Army. The continuous line represents the typhoid, the line of dots and dashes the paratyphoid A, and the line of short dashes the paratyphoid B.

The varying altitudes to which these curves rise on successive days is expressed, not directly by dilutions, but by the number of agglutinin units per cubic centimeter of serum, determined by the Dreyer method. These charts are therefore not only comparable within themselves from day to day, but comparable with each other and comparable with the results obtained by other workers using the same technic.

The method of administering bacterial vaccines in use by the Army at the time these studies were begun was as follows: The first dose consisted of 500 million typhoid. The second dose on the fourth day following consisted of 375 million paratyphoid A, plus an equal number of paratyphoid B. On the fourth day following, 1,000 million typhoid were given. On the fourth day following this, 750 million each of paratyphoid A and B, were given. Four days later the final typhoid dose of 1,000 million was given and again in four days the final paratyphoid A and B dose of 750 million was given.

During the course of these studies the method was changed so that the first dose contained, combined, 500 million typhoid and 375 million each of paratyphoid A and B. The second dose of double the amounts was given seven days later. The third dose, identical with the second, was given seven days later. Some of the accompanying charts represent some of the first routine cases under the new method at the Army Medical School.

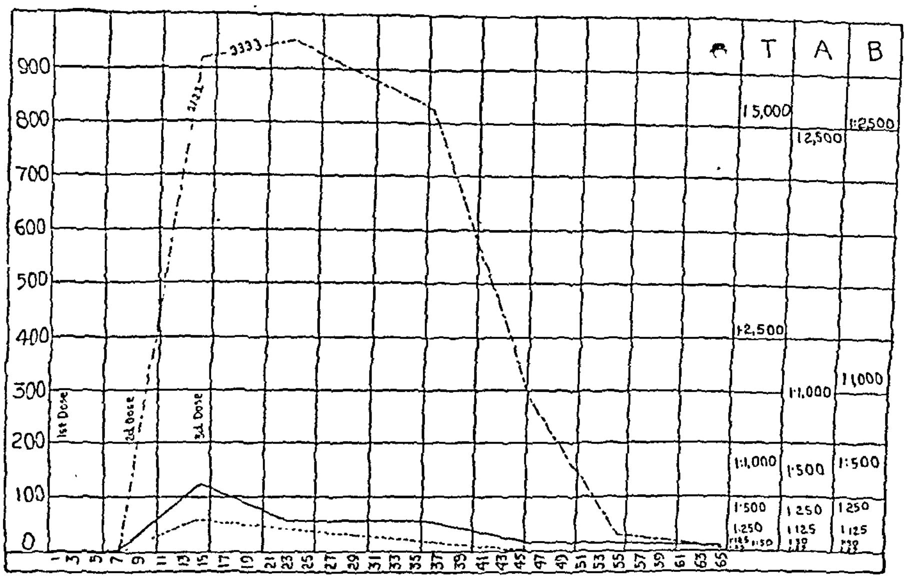

Chart 3.—*No previous vaccination. Army vaccine, September, 1917.* First injection, slight systemic and local reaction; highest temperature, 99.8. Second injection, slight systemic and local reaction; highest temperature 99.8. Third injection, moderate systemic and slight local reactions; highest temperature, 100.0.

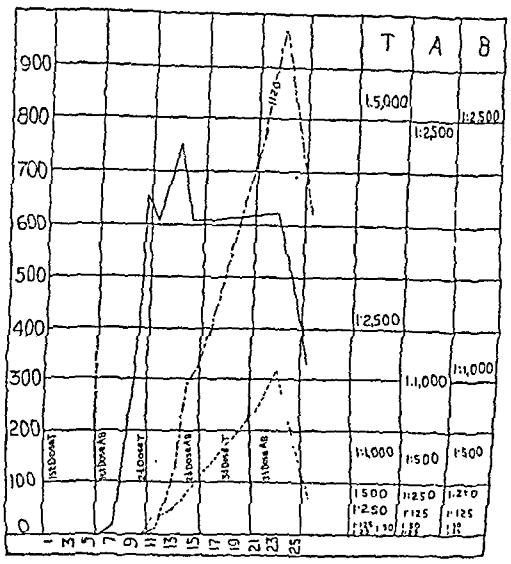

Chart 4.—*No previous vaccination. Army vaccine, July, 1917.* Severe local and general reaction after second paratyphoid *A* and *B*. *Moderately severe general reaction after the second typhoid.* Otherwise the reactions were negligible.

METHOD

Briefly stated, the method employed is as follows: Standard agglutinable cultures were obtained from the Department of Pathology, University of Oxford, for typhoid, paratyphoid A and paratyphoid B. Each one of these cultures represented one of standard opacity, with a given and noted factor of agglutinability. These cultures were formaldehyd killed and of recent manufacture. The serums to be tested were set up in macroscopic agglutination tubes, in dilutions with physiologic sodium chlorid solution ranging from 1:25 to 1:5,000. To each of the tubes was added a constant quantity of the standard culture. The tubes were then placed in a water-bath at 55 C. for two hours, allowed to cool for fifteen minutes, and read for the highest dilution in which agglutination, visible to the naked eye, occurred without sedimentation. The dilution of the serum in this tube was then divided by the known factor of the culture used, resulting in the units of agglutinins per cubic centimeter of serum. These units were then charted.

When I was ordered to my station at the Army Medical School, I continued the observations in a series of six cases, begun by Dr. W. C. Davison, who was unable to continue them through his change of station. At the same time I added several new cases to the group. These studies were at that time interesting, not only in that they gave some idea of the height to which the typhoid agglutinins were developed, but also in that they gave positive information that very definite quantities of agglutinins for paratyphoid A and particularly for paratyphoid B were being produced. The relative celerity with which individuals responded by the production of specific agglutinins was a somewhat variable but interesting demonstration. The persistence and gradual reduction of the quantity of agglutinin units in this first group of men could not, unfortunately, be observed over any extended time, since the men whose serums were being tested were all lieutenants in the Medical Reserve Corps, temporarily stationed at the Army Medical School and leaving for distant stations on the completion of their vaccination.

I therefore began a study of fifteen of my classmates, student candidates for the Medical Corps of the Army. This series of cases I could keep under observation a greater length of time, though the existing emergency has made it shorter than it might have been; however, the time has been long enough to yield some interesting data.

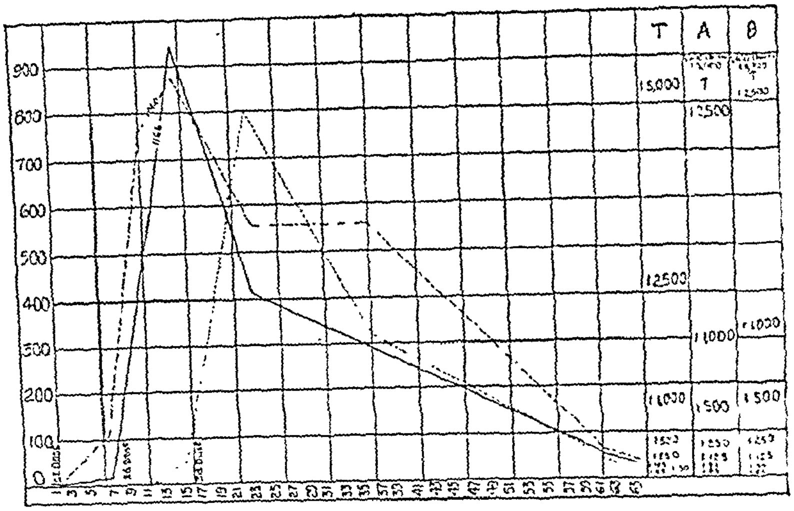

Chart 6.—No previous vaccination. Army vaccination, September, 1917. First injection, slight headache, slight local reaction; highest temperature, 99. Second injection, moderately severe local and general reactions; highest temperature, 100.4; duration of fever, two days. Third injection, no general, very slight local reaction; highest temperature, 99.

The method of titration and the method of preparing new quantities of the standardized agglutinable cultures, as practiced at the Army Medical School, have been described previously.[1]

FACTS BROUGHT OUT

Though, as mentioned before, the charts speak for themselves, it might be worth while to draw attention to certain points: Previous typhoid vaccination (and the same is true of paratyphoid A and B as well) has the effect of repressing the formation of a high unit content, though some change is noticed. It does not altogether inhibit the production of specific agglutinins, but serves rather to retard it, and restrain it after production begins. In some cases it seems to have very little effect on the production of agglutinins, and they rise in a curve similar to previously uninoculated cases. In no case did previous inoculation seem to augment agglutinin production. In one case (Chart 10) in which the patient gave a history of having had typhoid fever at the age 4, and of having been inoculated one and two years previously, there was a definite reduction of the agglutinin units, never returning to the original number, and approximating it only after twenty-five days.

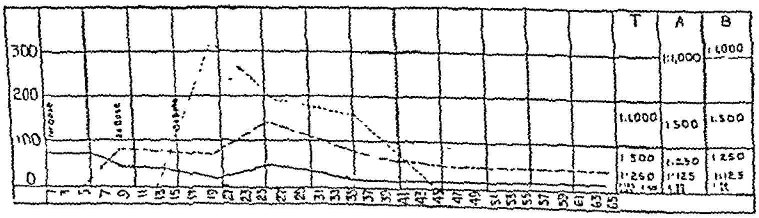

Chart 7.—Typhoid vaccination, 1915. Army vaccine, September, 1917. First injection, moderate general and local reactions; highest temperature, 99.5. Second injection, general reaction very severe; severe chill one hour after injection, lasting a half hour; patient went to bed; one hour after inoculation, temperature had gone to 105 and two hours later to 106, accompanied by delirium and profuse sweating; following day, temperature varied from 102 to 103, and approximated normal on succeeding day; axillary tenderness followed for several days. Third injection, mild local and general reactions, highest temperature, 99.

This feature is of importance and is to be kept in mind in the diagnosis of typhoid or paratyphoid A or B fever, by the Widal reaction.

Hamilton[2] is of the opinion that the Widal reaction is of no value in the diagnosis of typhoid fever, in previously inoculated individuals. Dreyer, Walker and Gibson[3] and Davison[4] present arguments in support of their opinion that macroscopic Widals, with a standardized agglutinable culture, done at intervals, to demonstrate fluctuations upward or downward, in agglutinin content, have a definite diagnostic value. However, the fluctuations that appear in some of these charts, after the titer has neared the base line, occur in the cases of quite normal men, with no physical findings to suggest their cause. In a later series of cases, which was not only continued over a greater length of time, but in which the titrations were done much more frequently, these fluctuations without apparent cause are much accentuated. In view of this fluctuation for some months after vaccination, it seems ill advised to draw any diagnostic conclusions from such fluctuations, in a case of fever. While such fluctuations may be pointingly suggestive, they are not at all to replace, diagnostically, an early blood culture or the isolation of the organism from the stool.

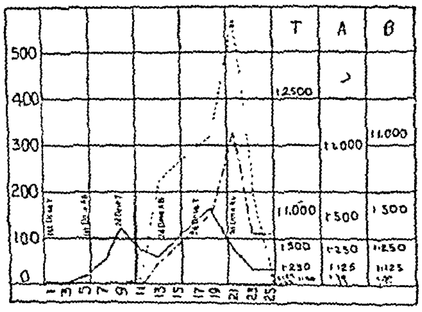

Chart 5.—Army vaccine, July, 1917. No history obtained.

In only one case was a total absence of agglutinin production observed (Chart 8). This case showed a normal production of paratyphoid A agglutinins, a production of typhoid agglutinins consistent with a previous typhoid inoculation (interesting because the previous vaccination took place four years ago), and no agglutinins for paratyphoid B.

In another case, typhoid and paratyphoid A agglutinins responded normally, while paratyphoid B agglutinins failed to make their appearance until the twenty-first day after inoculation, after which they persisted in a normal manner. This chart (Chart 9) is interesting in that it shows a secondary rise of all three types of agglutinins, following shortly after the assumption of the patient's duties in the vaccine room, where he was constantly exposed to infection. During this time he presented an illness with malaise, rise in temperature, etc., sufficiently simulating in a clinical way, an ambulatory case of typhoid fever, to make a blood culture advisable. Blood cultures revealed no growth, and complete recovery followed in a week or ten days. Reliance on the symptoms and the fluctuations in the agglutinin content, in this case, might have led to a diagnostic error.

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[1] Fennel, E. A.: The Dreyer Method of Agglutination as Used at the Army Medical School, The Journal A. M. A., March 2, 1918, p. 590.

[2] Hamilton, C. D.: The Effect of Typhoid Vaccination on the Widal Reaction, The Journal A. M. A., Nov. 27, 1915, p. 1873.

[3] Dreyer, G.; Walker, E. W. A., and Gibson, A. G.: Lancet, London, 1915, 1, 324.

[4] Davison, W. C.: The Diagnosis of Enteric Fever (Typhoid and Paratyphoid A and B) by Agglutination Tests, The Journal A. M. A., April 22, 1916, p. 1297.

To indicate that the repression not only of typhoid, but also of paratyphoid A and paratyphoid B agglutinins must be considered in previously inoculated patients when the triple vaccine has been used, Chart 1 presents the repression of typhoid agglutinins, Chart 2 that of paratyphoid A, and Chart 3 that of paratyphoid B. The probability of cross-agglutination in each of these cases must be considered, as well as the history of previous vaccinations.

While cross-agglutination may take place, the units within which this may take place have been quite definitely determined, and need not be considered in those charts in which all three agglutinins rise to a fair height. In a typhoid monovalent serum of 800 agglutinin unit content, the cross-agglutinin unit content for paratyphoid A is 65 and that for paratyphoid B is 80. In a paratyphoid A monovalent serum of 3,000 unit content, the cross-agglutinin content for paratyphoid B is 160 and that for typhoid is 65. In a paratyphoid B monovalent serum of 3,750 unit content, *the cross-agglutinin* content for paratyphoid A is 130, and that for typhoid is 65.

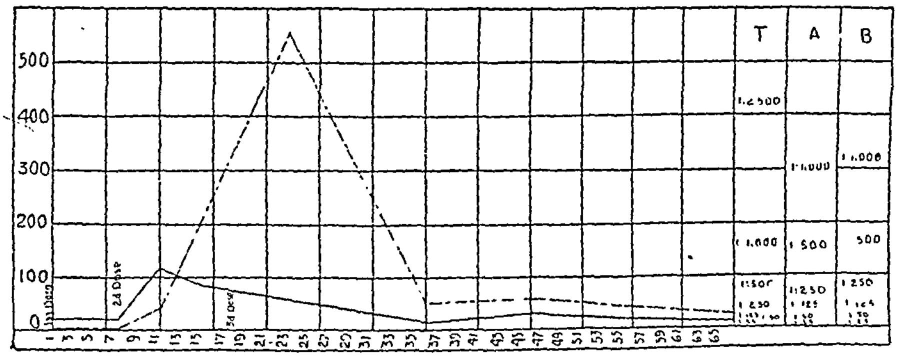

Chart 8.—Typhoid vaccine, November, 1913. Army vaccine, September, 1917. First *injection, no general, slight* local reaction. Second injection, malaise and chills, considerable local reaction; highest temperature, 100. Third injection, no general, very slight local reaction.

The very generous development of all three types of agglutinins in the case of Chart 6 might be explained by the patient's rather wonderful physique and his previous freedom from infection or vaccine.

There seems to be no logical relationship between the systemic or local reaction and the number of units of agglutinins produced. These reactions are almost always of a negligible character, and in spite of the fact that medical men are notoriously introspective, only one of the subjects of this series complained with reason (Chart 7). In this case the very severe reaction was probably due to the puncture of a small vein in the administration of the vaccine. It is a rather constant observation, however, that one of the three inoculations is followed by some reaction while the other two give rise only to a slight local reaction. In by far the greater proportion of cases it is the second dose that gives rise to this systemic reaction. This lack of correlation between the reactions and the agglutinins produced is in substantiation of the work of Craig[5], who showed not only that the general and local reactions after the triple vaccine did not exceed those after the unmixed or paratyphoid, but also that there was no direct relationship between these reactions and the amount of antibodies produced.

Craig's observations, not in agreement with the results of some English observers, that the agglutinin *titer for paratyphoid B was lower than those for the* two other organisms, are borne out in the majority *of the cases of this series, if they read in dilutions* direct. However, if the readings are made in agglutinin units, *the differences are so slight that a* much larger number of cases must be considered before any conclusions may be reached. Besides, the repression caused by previous vaccination must always be considered, and it is possible that prolonged previous exposure to minimal doses of organisms, with a production of a low-grade "natural" immunity might explain some of the wide variations in individuals, or the variations of the three agglutinins in the same, previously unvaccinated individual.

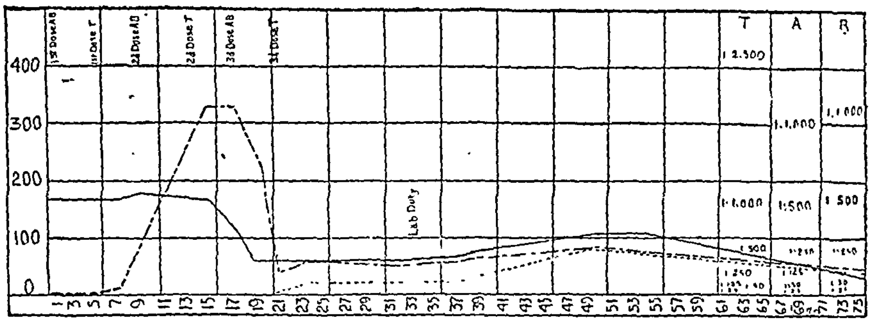

Chart 9.—Typhoid vaccination six weeks before Army vaccine. Army vaccine, July, 1917. Moderate reaction after second paratyphoid dose, and after second typhoid dose. Otherwise the reactions were negligible.

The pro-agglutinoid zone *ran a rather* consistent course. It *was, naturally,* not noticed, when agglutination took place in dilutions only so low as 1:25 or 1:50. *It* made its appearance, however, when agglutination took place in dilutions of 1:125 or 1:250. When this failure to agglutinate in lower dilutions, with very positive agglutination in the higher dilutions, once made its appearance, it ran a course consistently dependent on the dilutions, and not on any discoverable extraneous factor. A pro-agglutinoid zone ranging from dilutions of 1:25 to as high as 1:1,000 was frequently noticed during the time the agglutinins

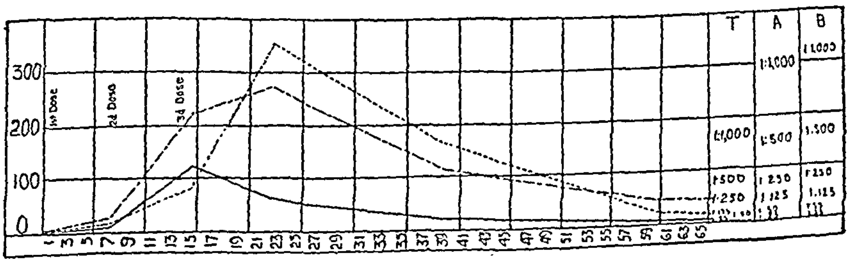

Chart 10.—Typhoid fever in 1896. Typhoid vaccine, 1915. Mixed commercial vaccine, 1916. First injection, headache, slight local reaction, highest temperature, 99.6. Second injection, headache and slight abdominal pain; *highest* temperature, 99. Third injection, slight headache, slight local reaction; highest temperature, 99.

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5. Craig, C. F.: Triple Typhoid Vaccine (*Bacillus Typhosus*, B. Paratyphosus A. and B. Paratyphosus B), The Journal A. M. A., Sept. 22, 1917, p. 1000.

were at their height. It is important to keep the pro-agglutinoid zone in mind, lest through an insufficiently high dilution a tube in the pro-agglutinoid zone should be read as a wholly negative result.

While Zinsser, basing his opinion on the work of Bechtold[6] and that of Neisser and Friedman,[7] considers the assumption of pro-agglutinoids unnecessary, their existence would serve to make clearer some of the phenomena noticed. That the pro-agglutinoids not only completely inhibit the agglutination in the lower dilutions but partially inhibit it in the higher dilutions is possible. This supposition is borne out by the fact that when the titer of a serum comes down, the pro-agglutinoid zone precedes it, and with the total disappearance of this zone, a secondary rise on the agglutinin titer appears, which is difficult to account for in any other fashion.

CONCLUSIONS

1. Definite agglutinins for all three organisms are developed after the use of Army vaccine. They are equal after alternating doses and triple vaccine, the methods are equally effective, and the time-saving element in the latter is obvious.
2. Previous vaccination has the effect of repressing agglutinins for the specific organism.
3. Fluctuations in agglutinin content occur after vaccination, in normal cases, and are of little diagnostic value in cases of fever.
4. There is no relation between the systemic and the local reaction, after vaccination, and the units of agglutinins produced.

THE PSYCHONEUROTIC FACTOR IN THE IRRITABLE HEART OF SOLDIERS [*]

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AND

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In 1871, Da Costa published his observations "On the Irritable Heart" as seen among soldiers invalided for this malady during the Civil War. During the present war this condition has again become prominent and names such as "disordered action of the heart" (D. A. H.), "effort syndrome," "debility" and "neurocirculatory asthenia" are employed to describe the affection. The group includes all cases which present a well defined syndrome in which certain nervous and circulatory symptoms are associated with increased [illegible] fatigue and in which no definite pathologic condition can be found to which to ascribe the clinical symptoms. The underlying pathogenic process is still unknown; and when we speak of the psychoneurotic factor in the "irritable heart" of soldiers, we do not imply an immediate causal relationship between the two, or that the symptoms of the two originate in the same way, but rather that possibly both groups may result from some common but as yet unknown cause.

It is probable that at present under the term "irritable heart" are included types of cases which are fundamentally quite different. The prominence of the nervous system in many instances is so striking that one naturally considers the relationship to the psychoneuroses, just as the circulatory phenomena among certain cases of war psychoneurosis must have led neurologists to wonder where the dividing line is to be drawn; in truth, there is a borderline where the two dominions overlap. Some even believe the irritable heart represents merely the cardiac difficulties of soldiers suffering from war neuroses. Again, it was evident that a certain number of patients with irritable heart had suffered from symptoms of the condition long before enlisting, some dating the onset to the formative period or even to childhood. The question whether some cases were not congenital or even hereditary in character also occurred, particularly when dealing with soldiers who belonged to the group called constitutionally asthenic. Then there is the serious, and, in the American Army, immediate problem of dealing with recruits with such histories who break down in training.

With these matters in mind we decided to analyze the detailed histories of 100 unselected cases to see whether such an analysis would throw any light on these questions or give definite confirmation to certain impressions which had been gained in the course of daily routine observations. Our study was based on the clinical material in the large Military Heart Hospital at Colchester, which admits almost exclusively soldiers invalided from the British Expeditionary Force.

For purposes of comparison the same characteristics selected by Capt. Julian M. Wolfsohn[1] in his paper on "The Predisposing Factors of War Psychoneuroses" were utilized, and also the statistics on 100 wounded soldiers used by him as controls. We have taken the liberty of reprinting two of his tables, but have incorporated our observations in cases of irritable heart in a column between those he has published for the psychoneuroses and those for control soldiers. In both tables (1 and 2) it will be seen that the percentage of the various characteristics named are in general highest in the psychoneurotic group, intermediate in the irritable heart group, and lowest in the control group of cases.

FAMILY HISTORY

It must be made perfectly clear that we were investigating the family history of cases of irritable heart for factors considered causal for psychoneuroses. The patients were invalided for irritable heart only, and the statistics obtained from these are placed in the middle column in both Tables 1 and 2.

A positive family history of one or several of the characteristics selected was obtained in 56 per cent of cases of irritable heart and in 38 per cent. of the controls; but the contrast between the two classes becomes far more striking when certain of the individual items are compared. Thus with reference to nervousness in the family history, there are 45 per cent. among the irritable heart group and only 15 per cent. among the controls; in regard to insanity and epilepsy there are 23 and 15 per cent. respectively, in the families of cases of irritable heart and none among the controls.

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[6] Bechtold: Ztschr. f. phys. Chem., 1904, p. 48.

[7] Neisser and Friedman: München. med. Wchnschr., 1914, **51**, 465.

[*] From the Military Heart Hospital, Colchester, England.

[*] This paper is abbreviated for publication in The Journal by the omission of Table 6, which is a long table of "Character of Service and Cause of Invaliding," arranged in groups, of each individual, with his age, civil occupation, period of total military service and of foreign service. Reprints of the complete paper may be obtained by writing to either of the authors.

[1] Wolfsohn, J. M.: The Predisposing Factors of War Psychoneuroses, The Journal A. M. A., Feb. 2, 1918, p. 303; Lancet, London, 1918, **1**, 177.

PERSONAL HISTORY

In Table 2, the contrast between cases of irritable heart and the controls is still greater. The total number or percentage of cases with a positive personal history is fifty-one among cases of irritable heart, twelve among the controls, and of those with positive family *and* personal history there are 46 per cent. among the former group and only 6 per cent. among the latter. As to the individual items, the predominance of certain characteristics among cases of irritable heart as contrasted with the controls should be especially noted, namely, presence of stigmata, prevalence of previous nervousness, a history of epilepsy or fits, of previous breakdowns, of moodiness, and of enuresis. It is well known that sufferers from irritable heart are apt to be teetotalers and are sexually not very active; the latter fact may account for the low percentage (18) of married men in this group as compared with 28 per cent among the controls and 42 per cent. among the psychoneurotics.

TABLE 1.—PERCENTAGE OF CHARACTERISTICS NAMED IN FAMILY HISTORY OF PATIENTS SUFFERING FROM (1) NEUROSIS, (2) "IRRITABLE HEART" OF SOLDIERS, AND (3) CONTROLS

	Neurosis Per Cent.	Irritable Heart Per Cent.	Controls (Wounded) Per Cent.
Nervousness	64	45	15
Alcoholism (parents and grandparents)	50	15	24
Teetotalers (parents and grandparents)	30	15*	16
Irritability of temper	36	27	12
Insanity	34	23	0
Epilepsy	30	15	0
Tuberculosis (immediate family)	12	13	4
Tuberculosis (relatives)	6	15	4
Stigmata	10	17	0
	—	—	—
Positive history for one or several of foregoing	74	56	38

* Figure incomplete.

TABLE 2.—PERCENTAGES OF CHARACTERISTICS NAMED IN THE PERSONAL HISTORY IN CASES OF (1) NEUROSIS, OF (2) "IRRITABLE HEART" OF SOLDIERS AND OF (3) CONTROLS (I. E., WOUNDED)

	Neurosis Per Cent.	Irritable Heart Per Cent.	Controls (Wounded) Per Cent.
Stigmata	34	12	4
Previous nervousness	66	46	12
Fears	50	31	8
Head injury	38	5	12
Epilepsy and "fits"	8*	5	0
Tobacco (excessive)	8	1	4
Alcohol (excessive)	6	0	16
Alcohol (teetotaler)	48	36	20
Married	42	18	28
Moody	55	27	8
Previous breakdown	2	21	0
Enuresis	12	14	4
Frights in childhood	4	19	0
Excessive religion	6	6	0
	—	—	—
Positive personal history	76	51	12
Positive family and personal history	70	46	6

* As stated in the text, the data in the neuroses and the controls are reprinted from Captain Wolfsohn's paper; in his figures, however, only epilepsy was considered, whereas we have also included "fits" which may, or may not, have been true epilepsy.

Of the 100 cases analyzed, sixty-one gave a positive family *or* personal history for psychoneurotic factors. Of these, forty-six gave a positive family *and* personal history, a group which we will call Group 1 to distinguish it from Group 2, which consists of thirty-nine cases with a negative family and personal history (Table 3). A comparison of other facts in these two large groups, 1 and 2, of cases of irritable heart is shown in Tables 4 and 5. As regards previous occupations in civil life, it is noteworthy that patients in Group 1 followed largely sedentary and light occupations, whereas of those in Group 2 some did light but more did heavy work. In Table 5 it is shown that the average duration of foreign service is six months less among Group 1 than in Group 2; but the real difference between the two types is seen in a comparison of the *character* of the military service rendered; only four out of forty-six in Group 1 did full duty, as contrasted with thirty-three out of thirty-nine in Group 2.

TABLE 3.—PERCENTAGES OF CASES OF IRRITABLE HEART OF SOLDIERS SHOWING POSITIVE FACTORS IN THE FAMILY OR PERSONAL HISTORY, PREDISPOSING TO PSYCHONEUROSIS

	Neurologic History		
	Family	Personal	Percentage
Group 1	+	+	46
Group 2	—	—	39
Group 1A	+	—	10
Group 1B	—	+	5

CHARACTER OF SERVICE

The character of service of each of the 100 men is also given in abstract in Table 6, and it is very evident that the patients in Group 1 from a military point of view gave such a poor account of themselves as a whole as to make one doubt whether it was worth the time and expense devoted to them. On the other hand, those in Group 2 certainly did at least the military duty of an average soldier, and many of *them* gave most valuable and prolonged service. *In such* patients, invalided for irritable heart, as *have neuropsychic* factors in their family and *personal anamnesis*, the value of the military service *rendered has been* found to be negligible (Table 6).

TABLE 4.—OCCUPATION

	Sedentary	Light	Heavy
Personal and family history positive (Group 1).	10	27	9
Personal and family history negative (Group 2)	2	17	20

THE CAUSES OF INVALIDING

The cause of invaliding is given for each of the 100 cases in Table 6, and it is worthy of note that among the cases in Group 1 there is frequently, in fact, in twenty out of forty-six cases, nothing definite; on the other hand, in Group 2 there is more frequently a definite precipitating cause, such as an infection like trench fever or dysentery, *prolonged service, gassing or shell explosion.*

TABLE 5.—AVERAGE AGE AND DURATION AND CHARACTER OF SERVICE

	Group 1 (46 cases)	Group 2 (39 cases)
Average age	27 years	25 years
Duration of foreign service	13 months	19 months
Number of patients that did full duty	4	33
Number of patients that had no foreign service	9	2

CONSTITUTIONAL PHYSICAL ASTHENIA

The sharp contrast between the two groups goes further than differences in their family and personal histories as regards neuropsychic factors, occupations in civil life, or duration and character of foreign service. A history of constitutional asthenia was obtained in almost 70 per cent. of Group 1 cases and in only 12.8 per cent. of Group 2.

By the rather vague term "constitutional asthenia,"[2] is meant a relative inferiority or an anomaly in the assemblage of inherent characteristics, both functional and morphologic, which go to make up the organism. Among the constitutionally asthenic we include those who have always been short of breath, have been unable to play the most strenuous games or keep up physically with the average of their fellows, have fainted or become dizzy easily, have blushed readily, perspired too profusely, and have suffered from cold extremities. There appear to be two types of such individuals, first, those who are weak and poorly built, or may have a "habitus," and second, those who to all appearances are muscular, strong and robust, and yet for some unknown cause have had symptoms such as dyspnea on exertion from youth up.

One may also include under this term patients who have a habitus, such as the narrow chested or splanchnoptoptic, those who have given evidence of a diathesis such as the hemorrhagic, the exudative, the lymphatic or the spasmophilic, and those having a dyscrasia, or belonging to certain types such as the vagotonic, angiospastic, erethic, feminine, eunuchoid, etc.; or those showing definite evidence of disturbance of the endocrine organs. Attention has been directed for many years to this whole question of constitution by F. Kraus, and it is impossible to enter into the subject here; but it must be emphasized that apart from neuropsychic factors, there is a constitutional tendency in certain individuals which predisposes them to the development of the irritable heart syndrome. Moreover, such a history of constitutional asthenia was present in 70 per cent. of Group 1 cases and in only 12.8 per cent. of Group 2. And it is this condition which is meant when the cause of invaliding in Table 6 is indicated as "nothing definite."

JUVENILE OR DEVELOPMENTAL VASONEUROTICS

From a study of the personal histories, it is believed that many patients with irritable heart of soldiers are the mature individuals who during their developmental period presented vasoneurotic symptoms. Of the forty-six patients in Group 1, thirty-two or 70 per cent. showed symptoms of constitutional physical asthenia before the age of 17. Of these, thirteen had symptoms as long as they could remember. Of the remaining nineteen, the age at which symptoms of constitutional weakness first manifested themselves ranged from 8 to 16, and averaged 11.8 years for those who could recall approximately their age when the symptom or symptoms appeared. (Two other patients date the appearance of their symptoms to their twenty-second and twenty-third year, respectively; but as the symptoms appeared so late, it is not certain they belong to the same group.)

Apparently hitherto no attention has been paid to a very important fact, that a syndrome identical with that of irritable heart occurs not infrequently in children,[3] especially associated with orthostatic albuminuria.[4] These symptoms usually arise in children at the school age, from 8 to 14, and are "chiefly those referable to the cardiovascular system, namely, dyspnea on exertion, palpitation, precordial pain, headache, fainting, hypersusceptibility to cold." To quote Bass and Wessler again:

> In spite of the absence of any demonstrable increase in the size of the heart, all of these children nevertheless had definite symptoms. . . . Twelve of the fifteen had definite signs of abnormal function, five had booming first sound, three had apical systolic murmurs; four had marked accentuation of the second pulmonic sound; four showed apical signs of marked overaction, and four showed increased heart dulness to the left.

In the illustrative case history that follows this description, they note "hands cold and cyanotic, marked dermographia, Chvostek's sign positive." Moreover, orthodiagraphic study of these cases showed that although the hearts do not dilate after exercise, a considerable number of them fail to become smaller under these conditions. In all these particulars, then, these cases formerly called "dilatative weakness,"[3] resemble the irritable heart.[5] In fact, the juvenile cases are identical in symptomatology with the syndrome as seen in soldiers. It seems highly probable to us, therefore, that the adult patients with irritable heart who give a previous history of similar symptoms at the prepuberty age, or as far back as they can recall, have been children who are recognized as suffering from "vasoneurosis," "dilatative weakness," etc. Indeed, we have been able to follow in civil practice one boy with a positive family history, whose symptoms began with cyclic vomiting in infancy and childhood, who had dyspnea, palpitation and occasionally pain on walking up-hill in his teens, and at 18 years of age presented the characteristic clinical picture of neurocirculatory asthenia with overacting heart, very diffuse apex beat, loud systolic murmur, etc.

DIFFERENCE IN SYMPTOMATOLOGY OF THE TWO GROUPS

In comparing the symptoms in the two groups of cases, that is, those with and those without psychoneurotic factors in their family and personal histories, it is noteworthy that in general, soldiers in Group 1 complain almost invariably of chest pain among other symptoms; (indeed, the men are apt to "stick it" until pain develops; then they become alarmed and report sick). Patients of Group 2 rarely complain of chest pain, but suffer more from exhaustion and weakness; they are "done up," to use their own expression. One case may be cited belonging to Group 2 which illustrates that an acute infection may be the cause of the irritable heart, that these symptoms may then disappear and leave simply exhaustion. The patient referred to broke down after prolonged service and trench fever with breathlessness which disappeared after a fortnight, leaving him with weakness, exhaustion and nervousness, but no dyspnea or pain. The post-infectious cases of "irritable heart" are more apt to prevent exhaustion symptoms and only exceptionally pectoral pain.

There is perhaps a certain parallelism between these two groups of "irritable heart," and cases of war neuroses. If we understood Captain Rivers correctly, certain cases of shell shock result in repression neurosis, the *anxiety* neurosis, while those resulting from exhaustion or infection manifest themselves as *exhaustion* neurosis (neurasthenia). Similarly in a general way, among patients with irritable heart there are those belonging to the constitutional group, who suffer from chest pain, etc., and those who belong to the exhaustion or the postinfectious group who have fatigue symptoms, but rarely much pain.

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[2] In the British Army "constitutional" means merely "pre-enlistment"; a condition is termed constitutional if it existed before enlistment.

[3] Martius: Kong. f. Inn. Med., 1899, 3, 41.

[4] Bass, M. H., and Wessler, H.: Heart Size and Heart Function in Children Showing Orthostatic Albuminuria: An Orthodiagraphic Study, Arch. Int. Med., April, 1913, pp. 403-417. This paper gives the references to the literature on the subject.

[5] We examined thirty unselected cases of "irritable heart" and found one with orthostatic albuminuria. Orthostatic albuminuria usually disappears at puberty, but may remain in adult life. We have observed Chvostek's sign repeatedly among soldiers suffering from irritable heart.

SUMMARY

As stated at the outset, we do not know the fundamental pathology of the syndrome known as the "irritable heart" of soldiers. It is almost certainly not a clinical entity. In general, there are two large groups of cases whether investigated from the standpoint of neuropsychic factors in the family and previous history, or from that of preenlistment and constitutional symptoms. In half the cases one observes, there is a positive family and previous history of factors considered predisposing to psychoneuroses, and in almost 70 per cent. of these there is a history of constitutional asthenia. It is this particular group (1) that inclines one to the view that an irritable weakness of the whole nervous system, including the innervation of the entire circulatory system, may account for the varying neuropsychosomatic symptoms.

There are all the remaining cases to be considered, however. It may well be that the resistance of individuals in Group 2 was perfectly normal, but that they were subjected to a strain or infection, sufficiently prolonged or intense to exhaust their reserve. The normal individuals, when they do break down, seem to present symptoms of exhaustion; the relatively inferior individuals show both excitation and exhaustion.

The burden to the Army of cases of irritable heart may be lightened by the early recognition of cases belonging to Group 1. As yet we do not know how many individuals having similar family and previous histories for neuropsychic factors (with or without preenlistment symptoms) give valuable military service and are not invalided. Until such statistics are available, it is practicable to recommend that only special boards be guided in the disposition of recruits by such anamnestic data.

In a type case of Group 1, the patient has a positive family and personal history for neuropsychic factors: in civil life followed a sedentary or light employment, tolerated about one year of foreign service, but that usually at light duty. He is apt to break down finally, not from a definite precipitating cause, but because he is fundamentally relatively inferior. He almost invariably complains of chest pain among his other symptoms.

In a type case of Group 2, the patient has a negative family and personal history, in civil life followed some occupation involving hard labor, stood about one and one-half years of foreign service, and that usually at full duty. He is more apt to give a history of a definite precipitating cause, such as prolonged service or acute infection, which invalided him. He complains more of exhaustion and weakness, and only rarely of chest pain.

Individuals of Group 1 who were invalided gave a history indicating that the value of their military service was almost negligible, while before breaking down many of those in Group 2 gave unquestionably valuable service.

509 West One Hundred and Twenty-Second Street—930 Park Avenue.

PROPHYLACTIC TREATMENT IN THE PREVENTION OF VENEREAL DISEASE

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During the past couple of decades, the trend of medicine has been steadily and progressively toward preventive rather than curative medicine. In no domain of medical science has this principle been more strongly exemplified than in the sanitary measures that are being utilized to protect the health of the soldier in the United States Army. For a long time the great bane of all armies has been the venereal problem, and the same applies to navies. The United States government, realizing the great necessity of curbing this evil, has adopted certain regulations which have been of the greatest service. These regulations are four in number:

1. General orders concerning venereal diseases, requiring men who expose themselves to the danger of contracting venereal diseases to report at once for prophylactic treatment on return to the camp; with trial by court martial for neglect of duty, for any soldier who fails to comply with such instructions, and loss of pay while absent on account of sickness.
2. Thorough physical inspection of all the enlisted men of each organization, twice in each month, by a medical officer accompanied by the company or detachment commander.
3. Abolition of alcohol from the Army.
4. Establishment of "vice zones" around military camps, forts and cantonments.

APPLICATION OF THE REGULATIONS

The object of this article is to show what can be obtained by the judicious application of the foregoing regulations in the individual regiment or smaller organization, which is the working unit in the Army. I know of no better way to illustrate the efficiency of these procedures than to cite my experiences as regimental surgeon in the Three Hundred and Fiftieth Field Artillery, Ninety-Second Division, National Army, located at Camp Dix, N. J.

The Ninety-Second Division is composed entirely of colored troops, and our regiment is made up of drafted men from the state of New Jersey. From the formation of this regiment, Nov. 8, 1917, to April 19, 1918, only nineteen cases of venereal disease have developed which did not exist prior to draft. Of these, twelve men did not apply for or receive prophylactic treatment. These men were all tried by Summary Court under General Order 45, and appropriately punished under military regulations. During this time 1,561 prophylactic treatments were given, and only seven men thus treated contracted venereal disease. Of the seven who contracted venereal disease notwithstanding prophylactic treatment, all were cases of over twenty-four hours' duration. Five were gonorrhea, one chancroid, and one syphilis. This shows the efficiency of prophylactic treatment; it also demonstrates the value of early treatment whenever possible, as four out of the seven cases developed during the Christmas and New Year's vacations, when the men had four and one-half days' leave, and all four of these admitted relations on the first day of leave, making an interval of four days before receiving prophylactic treatment. This leaves only three cases that developed after prophylactic treatment when the interval was between twenty-four and forty-eight hours, and not a single case in which prophylactic treatment had been administered within twenty-four hours after exposure. Remembering that 1,561 prophylactic treatments had been given during this time, we can only wonder how many cases would have resulted without this treatment. The number of prophylactic treatments, it may be explained, would have been far greater had not the camp been under quarantine over five weeks of this period, and during this time no leave was granted. This represents an average of over 100 treatments each week-end, since receiving the great bulk of our troops. We have had as high as 150 treatments between Sunday night at 10 p. m. and reveille the following morning.

THE TYPE OF SOLDIER

These men were all raw recruits drafted into the National Army, and the majority had held such positions as butlers, chauffeurs, farm helpers, cooks, waiters, bell-boys, and a large number as laborers in mills, shops and factories.

About 20 per cent. had only a limited knowledge of reading and writing; a few, about 3 per cent., were completely illiterate. About 5 per cent. had completed a grammar school or higher education, leaving about 72 per cent. who had an equivalent of from two to six grades in a grammar school course. It was surprising to note how rapidly these men accepted and carried out disciplinary measures. They are in every way equal to their white brethren. The venereal report given above and the weekly health report will certainly confirm this fact.

Quoting from the weekly telegraphic report for the past four weeks, we note that:

Three weeks ago, the percentage of sick was 0.8.
Two weeks ago, the percentage of sick was 0.9.
One week ago, the percentage of sick was 0.6.
April 19, 1918, the percentage of sick was 0.53.

Quoting from the report of the division sanitary inspector to the division surgeon, under date of April 17, 1918, we note that:

Three Hundred and Fiftieth Field Artillery, the noneffective rate per thousand was 15.7.

Camp Dix, N. J., the noneffective rate per thousand was 43.0.

Thus it will be seen that our sick rate is one-third the average camp rate; and in addition this is the lowest rate of any regiment in the camp.

This also shows that the colored soldier obeys orders, as no such results could be obtained if sanitary regulations were not obeyed. The comparison with other groups is just, since the various organizations live and train under the same conditions.

Sixteen per cent. of the enlisted men had venereal disease on admission, divided thus: 83 per cent., gonorrhea; 7 per cent., chancroid; 10 per cent., syphilis.

METHOD OF OBTAINING RESULTS

The official reports have quite regularly employed the designation, *Very Satisfactory.* Now, how have these results been obtained?

1. By harmonious cooperation and concerted action between the line and the medical officers on all important subjects pertaining to sanitation and the general health of the men. This can be accomplished only when proper *esprit* exists between officers working together for a common cause.

2. By frequent lectures to the men, in which the medical or line officer explains in plain, understandable English the reason for every order or request bearing on this subject, at the time it is made; and at the same time convincing the men that that particular order or request is solely for their own benefit or protection, the disobeying of which would mean physical suffering as well as military punishment.

3. By encouraging the men in all forms of athletics, music and entertainments of various kinds, and in the reading of useful books on military or other interesting subjects.

4. By securing the implicit confidence of the men in their officers as their leaders to such a degree that when an order is given, it is instantly and willingly obeyed at all times and under all conditions.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

ANTIPNEUMOCOCCUS SERUM.—See THE JOURNAL, June 1, 1918, p. 1599.

Cutter Laboratory, Berkeley, Calif.

Anti-Pneumococcic Serum, Type I.—Marketed in vials containing 50 Cc.

H. K. Mulford Co., Philadelphia.

Antipneumococcic Serum, Type I.—Marketed in double ended vials containing 50 Cc.

Antipneumococcic Serum, Polyvalent.—Prepared by immunizing horses with dead and living pneumococci of the three fixed types (Types I, II, III).

Marketed in double ended vials containing 50 Cc. each, with sterile needle and tubing for intravenous injection.

Dried Milk in Infant Feeding.—In Great Britain the local government board has issued a report on dried milk in infant feeding as the result of an inquiry carried out by Dr. F. J. H. Coutts, medical inspector of the board, and by Dr. George Winfield, who was commissioned to investigate the nutritive value of dried milk in infant feeding and its bearing on certain disturbances of nutrition. Two methods of preparing dried milk are the process of passing the milk over heated cylinders and scraping off the film thus formed, and the process of spraying a previously concentrated milk into a hot air chamber where the dried milk falls in the form of a cream colored powder. If kept dry, this powder will remain fresh for weeks or months, and when mixed with water in the proportion of 1 dram to 1 ounce, it corresponds in composition to ordinary milk. Its disadvantages are that it has a somewhat boiled taste, the fat rises quickly to the surface and there is generally some undissolved residue. It has proved, however, to be a good substitute for cow's milk, being much better than the proprietary foods, which contain much starch. The dried milk is said to contain far fewer germs than ordinary town milk and is less likely to transmit infectious diseases. Germs do not multiply in dried milk. It should be prepared only as needed for feeding, since it does not keep well.

RECONSTRUCTION AND REHABILITATION OF DISABLED SOLDIERS

REPORT OF THE FIRST MEETING OF THE SECTION ON MISCELLANEOUS TOPICS HELD IN THE AUDITORIUM THEATER, THURSDAY, JUNE 13*

The meeting was called to order by the chairman, Col. Frank Billings, Chicago, at about 9 o'clock.

The chairman said: You are here this morning because you are interested in our soldiers, the flower of American manhood, who have gone overseas to bear their breasts for you and me against the monsters on the other side; and you feel, as the whole country feels, that we must do something for those boys who are giving their all to the country should they become disabled in this war and do something for the—we call it the physical reconstruction of the men who are disabled; but that is not a very sympathetic word. What we mean is, that we want to make them well again, we want to cure them if we can, and we want to restore them to civil life that they may take their places in economic life again as capable of earning a living wage or salary as they were before, and to also enjoy life as we want them to enjoy it, because they certainly have earned it.

We have a man at the head of the Medical Department of the Army whom you all know. You know him because of his eminence in medicine, and particularly in sanitation. It is not necessary for me to repeat to you what he has done, because the world knows it. But you of the world at large do not know him as some of the rest of us do, because big as he is mentally, much as he has done for the world in sanitation, his heart is just as big as his scientific attainments; and he has conceived this idea of the restoration of our boys. When I tell you of the policy that he has announced, how he struggled to have that approved by the Secretary of War, and finally succeeded, you will understand that that policy is that no soldiers disabled in the line of duty shall be discharged from the Army until cured, or as nearly cured as their disabilities permit. We are fortunate in having the Surgeon-General with us to tell you at the beginning his opinion of physical reconstruction—General Gorgas.

Opening Address by Surgeon-General William C. Gorgas

Surgeon-General Gorgas said: The question of reconstruction of the phase that you hear outlined here today is entirely new to our Army; it is a new phase of military life particularly in this war. Originally in all armies the whole question was that of defeating the enemy; everything that tended in that direction was fostered, and those things that had no direct bearing on that were left uncared for. Three hundred years ago, for instance, the wounded man was of no particular use with regard to the defeat of the enemy. He was a drag on the Army, and no attention was given to him. Gradually there has been evolved more humanitarian motives, and the Army authorities have been able to care for the wounded not with the idea so much of increasing their military efficiency but with the humanitarian idea of looking after the wounded man.

I have no doubt that if it were necessary for the defeat of the enemy our soldiers and people would still be willing to do what our ancestors of two or three hundred years ago had to do, that is, to sacrifice the wounded. That has been the case both in the European armies and in the more savage armies, like the Zulu army, which were as efficient military machines as any we have ever known.

The great function of the Medical Department so far as the wounded is concerned is in getting them back to the Army. This department will have in the reconstruction nothing to do with the men that are to be discharged. By examining the statistics of the Canadian army we get a pretty good idea of what we are going to have to do. They have sent over some 350,000 men; they have been at war now about four years. Of the men sent across they brought back about 10 per cent. for this reconstruction work. We calculate that our proportion will be about the same.

This reconstruction work is a greater departure from the military objective of the Army than has occurred in the past with regard to medical activities. We are not taking care of these men for the actual efficiency of the Army in the field; we are doing it from a humanitarian principle of making the men more useful, more happy, and achieving a better result both for the men themselves and for the community in making them useful and happy members of that community when they have returned to civil life. Heretofore most of the activities of the Medical Department of the Army have tended toward the direct efficiency of the Army.

Chairman's Address—The National Program for the Reconstruction and Rehabilitation of Disabled Soldiers

I shall attempt to tell you as briefly as possible of the national program for the physical reconstruction of our disabled soldiers. The national program would not be complete if it did not consider the soldier from the time he receives his disability in the field or through illness in hospital, until he is placed back in civil life. Recently Congress has enacted a law which places the disabled soldier after his discharge from the Army within the authority and jurisdiction of the federal Board for Vocational Education. The federal Board for Vocational Education has representatives on it of three cabinets. It is composed of men qualified to carry on their part of the work. Congress has given them power and jurisdiction over the man and money to do their work. They are enabled to cooperate with those federal departments which may best help them. They have the power to go out in the country and to secure the employment of men and women who are best qualified, unrestricted as to salary, in their work; therefore, that part of the work of the care and reeducation of the man after he shall have left the hands of the Surgeon-General until he is placed back in his employment in civil life is complete. I have no doubt that the qualification of that board will make that part of the work efficient. That is the smaller problem of the whole program. To the Surgeon-General is left the harder task, because he has jurisdiction over the man when injured or ill and has the care of him while he remains in the Army until he shall have been cured. He has the jurisdiction over him, the responsibility overseas and in our cantonments or training camps everywhere, in our hospitals generally after he reaches them until he is discharged; and his program, while understood, has not yet been granted all of the machinery to carry it out; but we do not doubt that with the morale back of us in this country represented by you and by the forces that he can command of the best in medicine and surgery in this country, he will be able to do his part quite as efficiently as the federal Board for Vocational Education.

Let me tell you a word of what the physical reconstruction under the Surgeon-General must mean. First of all, it means organization overseas and in our camps, that the men who have been disabled through illness or injury shall receive early and prompt attention looking toward their physical reconstruction; that the man who has lost a member, or his eyesight, or his hearing, or who is tuberculous, or whose heart has given out, should not be allowed to remain neglected and unattended to until he feels discouraged because of his disabilities. He must be dealt with promptly. He must be brought back to this country if abroad and he must receive early attention in order that his disability may be efficiently treated.

That part of the program has been taken up and is already organized, although not as completely as it will be. The man is treated in the general military hospitals; the soldier is under military care. The Surgeon-General has no power to treat him excepting in military hospitals. He is cared for by military forces, and not by civilians. The Surgeon-General may bring into the service civilians, and he will welcome civilian help; but those who deal directly with disabled soldiers are officers in the military service. The hospitals are general hospitals. The general hospital in the Army is much like our general hospital in civil life. It is a compound special hospital where all departments of medicine and surgery are recognized. So far the hospitals in this country utilized have been existing general hospitals. You hear of "reconstruction hospitals." Military hospitals general in character may carry on reconstruction.

The general hospitals so far used are not new; most of them have been in existence a long time. A few hotels were

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ble * Report of special meetings held as a part of the scientific assem-
the Sixty-Ninth Annual Session of the American Medical Asso-

509

Park Ave

taken over at the beginning of the war, because of the need of buildings, and are rented institutions. There is one at Lakewood and one at Cape May. There is one new hospital at Colonia, near Trenton, N. J., which will function chiefly as a reconstruction hospital. As the work goes on and the number of soldiers to be reconstructed increases, other hospitals will be built which will probably function as reconstruction hospitals. These hospitals will be so located as to bring the soldier nearest to his home. The question is asked frequently, Will these be state institutions? That cannot be answered. If we could have ideal conditions, each state would have a general hospital that would function in the physical reconstruction of soldiers; but it is too early to speak of that. Possibly the states could cooperate with the government to secure hospitals that could be used for physical reconstruction during the war, and if the states would cooperate in helping the government to finance them, these could be made permanent structures. But in all probability general hospitals that will be used for physical reconstruction will be constructed hereafter and will be located in the military districts of the country, of which there are sixteen.

Hospitals for physical reconstruction will differ in some degree from the hospitals that are used in civil life or for general purposes, in that not only will they provide the necessary personnel, medical and surgical, with the necessary operating rooms, laboratories and all that goes to the makeup of the modern hospital, but also they will have physiotherapeutic departments. By physiotherapeutic I mean measures physical in character used in the treatment of the sick, such as hydrotherapy, electrotherapy, active exercise in the form of drills, Swedish movements, outdoor games and massage or passive exercise. These will be employed and standardized to apply to disabled soldiers, no matter under what department of medicine or surgery they may fall. In addition to these physical agencies in modern medicine, we recognize another curative measure in the form of work—curative employment, if you please. This has been utilized in the civil hospitals to a degree dependent on the character of the community in which the hospital was situated, and has usually been called ward work. It has consisted frequently of work not so purposeful in its character, but rather as diversional in character, in the form of knitting, in the form of basket weaving, etc. But work which the Surgeon-General utilizes as curative in character in the general hospital for these soldiers is more purposeful than knitting, basket weaving and the like. In other words, it is of the kind and character of curative work that will look toward the training of the soldier for employment after his discharge from the Army. Or, in other words, it will be prevocational or even vocational in character. The discharged soldier will fall within the jurisdiction of the federal Advisory Board for Vocational Education, whose work is well cut out and is not entirely separate from that of the War Department; for this board, under the law, may act in an advisory capacity with the Surgeons-General of the Army and of the Navy in this work. In the same way the War Department and the Navy Department may act in an advisory capacity with the federal board after the soldier's discharge. In the event that he becomes ill after his discharge he may probably be brought back into the Army for further treatment. In choosing the curative work for the soldier, the advisory board can be of great use to the War Department in selecting the character of prevocational curative work which will be assigned to the soldier in the ward and in the workshop. To do this work under the Surgeon-General there is no difficulty in securing the personnel, medical and surgical, that he has at his command. He has choice of the best qualified medical men and women of the country to do the work, not only in camp and field, but also in the physical reconstruction of these soldiers. We know that they will do their work well. There is a misconception on the part of some physicians about what their duty will be with respect to physical reconstruction. I have had many interviews and have received many applications from them saying, "I want to come in and do physical reconstruction because I am interested in it, and have worked at it some in civil life." The medical man and the surgeon will function exactly in the physical reconstruction of the soldier as he does in the treatment of the man that does not need physical reconstruction. In some respects he will have to acquire some new lines of thought looking toward the restoration of function, but in which he has the cooperative influence of others, namely, the physiotherapeutists and the educational officers. Dr. Tate MacKenzie, a Canadian, has been invited by the Surgeon-General to take charge of the department of physiotherapy to standardize the work and to secure the proper personnel in physiotherapy that will enable us to do that work well.

The Surgeon-General has secured as the head of the Educational Department for Physical Reconstruction Mr. James E. Russell, dean of the Teachers College of Columbia University, New York, a man well known as an educator. He will organize a personnel of general and technical educators to work in the hospitals to advise with the doctors, the representatives of the federal Board for Vocational Education, and with the man himself as to the character of his prevocational or curative work.

We have already done a lot of work in spite of the fact that the government has not until now supported this program by the necessary legislation. The Surgeon-General has started the work in eleven hospitals, and in seven of them has the complete organization that I have named. The men from overseas, the men from our camps, are under treatment for physical reconstruction. Some of them have already been discharged, placed back in civil life and employed in new and gainful occupations for which they were trained while patients in the Army hospitals.

[Lantern slides illustrative of the work were presented and described by Colonel Billings.]

Reconstruction and Rehabilitation Problems as Solved in Foreign Countries

Lieut.-Col. Casey A. Wood, M. C., N. A., said:

During the first year of the great conflict practically all the warring nations began to do something for their disabled men in the way of rehabilitation. At first, these efforts were confined to combatants who had lost an arm or a leg, to those whose disablement was most evident; but gradually the tuberculous, the blind, the rheumatic, the nervous cases, and others who were unable for various reasons to return to the fighting line also were included. At present we find successful schemes, especially in Belgium, France, Great Britain, and Italy, as well as in the Teutonic countries, for the care of all these types of military incapacity through disablement. It is, however, to Canada that we must look for those experiences that are most likely to help us when we are confronted with problems of detail respecting the physical and vocational restoration of the disabled soldier and sailor. For example, the Canadian authorities were the first of all the belligerents to consider the responsibility to the disabled soldier a national one. They were the first to announce that it is the duty of the state to reeducate at the expense of the state those who had been crippled in their country's service.

From the standpoint of the experiences of all the belligerent countries, as Colonel Billings has pointed out, it was early recognized, although for a long time little was done to relieve the situation, that almost from the hour of a serious injury, especially one involving the probable loss of a member or an organ essential to the soldier's happiness and civil vocation, the crippled one began to regard himself as a hopeless invalid. Continued brooding over this belief at length induced a state of mind fatal to rehabilitation. It was no uncommon thing for the soldier to pass through even half a dozen hospitals before he reached what may be termed a reconstruction center—made it almost impossible of eradication. Such a mental attitude, born of the feeling that everybody avoids and will avoid a cripple, was eventually combated in most foreign countries—we have not yet thought of doing it in our own—by what is known as a "cheer-up" program. Not only were the medical officials and nurses attached to base and other hospitals instructed to encourage the disabled soldier on all proper occasions by telling him the good news of the rehabilitation program, but judicious, sane members of officially appointed "care committees," and other social service activities were appointed to visit the bedridden patient, as soon as that could properly be done, and kindly but firmly—a good deal of emphasis in some countries is placed on the "firmly"—preach the gospel of civil reestablishment. Now in most hospitals abroad the good work done by "cheer-up" officials is supplemented by motion pictures, by books on the subject of reconstruction, and even by short talks in hospitals telling what the disabled man may accomplish by the exercise of a little patience and perseverance. As soon as the disabled can profit by them, appeals are made to his patriotism, to his self-interest, to his domestic relations as a means of preparation for his subsequent return to the duties and pleasures of citizenship. From this time on preaching the doctrine "there are no more cripples" has been found by all foreign countries engaged in this work of salvation to be helpful—indeed, essential—to the successful establishment of the disabled in their former civil life surroundings.

It is the consensus of reconstruction opinion abroad, also, that the ideal rehabilitation program demands the continuous, and as far as possible, uninterrupted care and education of the disabled soldier. From the first days of his disablement until his placement once more in private life as a contented, wage-earning citizen, education and reeducation should go on. The task is much easier for doctors, for nurses, for vocational trainers, for placement agencies and the so-called advisory and follow-up services—not to mention the effect on the man himself—when he is surrounded by what may be termed a reconstruction atmosphere. Hence it follows that furloughs and leaves of absence should be as short as possible, and interruptions in his studies as limited as may be. Moreover, the training of these returned heroes is an intensive one. Most of the courses must possibly be limited to six months.

If the attempt on our part to salvage disabled soldiers and sailors is to be successful, it is necessary that at least three classes in the community should be carefully taught the principles of physical and vocational reconstruction. I do not say the details, I say the principles. The first class comprises medical officers, nurses, vocational teachers, and other officials whose duty brings them into close contact with the sufferer. The second class is composed of the soldiers themselves, and the third class is made up of the great mass of the public. Of the third class it may be said that every foreign nation has discovered that the labor of both physical and vocational reconstruction of the invalided soldier is greatly lessened when the soldier's own people—his parents, his wife, his sister, his brother and associates generally—possess a full knowledge of the purposes and processes of rehabilitation. When this is accomplished the returned soldier soon discovers that, although he is a hero, he is expected, for his own sake, for the sake of his country, for the sake of his family, to reestablish himself as a normal, independent, self-respecting citizen, capable of earning a living and asking favors from no man.

In England, in France, in Canada and in the United States, magazines are published on this subject, and all the usual forms of public instruction are invoked to carry forth this message of hope and salvation to every family in the land. When the time comes, as unhappily it must, that some loved one requires the offices of physical, mental or vocational reconstruction, it will surely be a consolation to all concerned to know just how and when this great work will be done. As one having, under the Surgeon-General, this particular duty of publicity, it is not improper for me to say that there will be distributed to this audience, after each meeting, copies of our new magazine, *Carry On*, together with literature for further distribution that presents briefly the main features of reconstruction.

The Surgeon-General's Plans for the Receiving, Transporting and Distributing of the Disabled From Overseas

Brig.-Gen. Robert E. Noble, M. C., N. A., Staff of the Surgeon-General, said:

The question of returning soldiers from overseas to the hospitals in the United States is largely a question of transportation. Being a medical man, I of course have no hesitancy in attacking that problem. The transportation means not only the return but the proper distribution and segregation of these patients after they arrive in the United States. We have devised plans by which the men will be classified according to wounds, sickness or disability, in France. They will be returned to the United States by hospital ships or other transportation provided, and on that ship all papers in connection with those men will be absolutely complete. We shall have traveling medical officers go from this country to Europe and return in order that these papers will be in such shape that when the men arrive in the United States we can handle them very much as they would a boatload of emigrants returning. The men will be tagged according to their injuries, so that we can separate them at once on arrival here, and can then send them by train to the hospital that has been selected for them. The commanding officer at the port of importation will be furnished with a list of the hospitals and the number of beds at each and the character of cases to be sent to each particular hospital. We shall have at these places an officer who is especially trained in matters of transportation, who will arrange a schedule for the trains and special coaches for the various passenger trains. On the hospital trains in this country there will be every comfort and convenience for the care of the sick and disabled. We shall have several types of coaches, we shall have kitchen cars, dining cars, ward cars, and what we call unit cars, for the staff. The unit cars will contain not only the staff but one or two medical officers, two or three nurses, or such number as may be necessary. That can be attached to a train and carried to any part of the country distinct from an entire hospital train. These unit cars will be so that we can send half a dozen or a dozen sick from any one place in the country, or send a trainload. Then these cars will be returned to the port of importation and used again.

The hospitals to which we shall send them will be scattered throughout the United States. We intend to follow a zone hospital system plan, that is, we shall return to the various draft zones the men from each zone. We shall have in this country enough beds to take care of any sick or wounded that may be returned from abroad.

It is not the purpose of the War Department to return to the United States men who will in a short time be again returned to the firing line. I think that that period has arbitrarily been fixed at six months. If, however, we find that a man is in such condition that he cannot be returned to the firing line, he will be brought back to the United States at the earliest possible moment.

The hospitals are of the pavilion type; they will be reconstruction hospitals in one sense of the word and in another sense they will be general hospitals. We shall at first send any class of cases to the hospitals until the reconstruction work of the hospital predominates; then we shall send a constantly diminishing number of general cases to that hospital until it becomes purely and simply a reconstruction hospital.

Acute Surgery as Related to Reconstruction

Lieut.-Col. M. G. Seelig, M. C., N. A., said:

In discussing the relationship between acute surgery and reconstruction, we shall consider only that phase of reconstruction which concerns itself with physical rehabilitation. In defining the phrase "acute surgery," one must at the outset guard against the assumption that acute surgery applies only to the exigencies dependent on war traumas. Such reasoning would cripple our Army by false logic. The Army surgeon must regard acute surgery as embracing those surgical diseases of an acute nature, and those traumas occurring in the general, cantonment, post, base and other military hospitals at home, as well as projectile wounds and acute surgical diseases occurring "over there."

The Army surgeon who assumes the responsibility of operative procedure on a patient also necessarily assumes the responsibility of returning that patient to duty status or to civil life, so completely cured that he can have no valid claim as a pensioner. Our responsibility is keenly emphasized, almost beyond the power of any man ever to be unmindful of it, by the recent ruling of the Judge Advocate-General which very properly makes it obligatory on the soldier either to submit to surgical therapy, if a properly constituted medical board decides that such therapy is necessary to enable the soldier to perform his military duties, or to face a court martial.

This type of responsibility carries with it, in addition to an intensified zeal to save life, a markedly heightened effort to restore the sick soldier to his status quo ante. He must be made fit for soldiering again at the earliest possible opportunity, or happily, as we look forward to victory, he must be rendered fit to reenter civil life fully able to carry on and do his bit without claiming any of the government aid that a grateful country stands ready to grant her incapacitated soldiers.

In essence, then, the Army surgeon practicing acute surgery finds himself face to face with the problem of reconstruction in such fashion that his set task is to do away as far as possible with the necessity of later so-called reconstructive work. This task, one which the civil surgeon is trained to meet, is fairly simple as applied to surgery performed on home territory. In the zone of advance, and also, though possibly to a less degree, in the lines of communication, the problem is seriously difficult and gravely pressing. The haste of battle, the exigencies of terrain and transport, the necessary improvizations of warfare, and other factors too numerous to detail, all exercise their influence on the mind and judgment of the surgeon.

And yet if his work is to carry the hall mark of "well done," it must always be done with the thought in mind of restoring the patient at the earliest possible moment with the least possible requirement of secondary so-called reconstructive surgery.

Naturally it is not necessary to emphasize that in acute war surgery, just as in acute civil surgery, our first and foremost duty is the conservation of life; nor should it be necessary to emphasize the fact that even the press of battle does not mitigate by jot or tittle the baneful effects of unnecessary operation.

It seems beyond question or doubt that late epilepsy and apoplexy, the aphasias, psychoses and other mental disturbances, bear a definite relationship to the type of front line surgery performed for cranial injuries; the early surgery done for the relief of spinal injuries is of itself one factor in the course of later paralyses, spasticities, bed sores and disturbed bladder and rectal functions. On the quality of judgment displayed in the first line to base hospital treatment of nerve wounds depends in no small measure the amount of later surgical effort necessary to correct overstretched muscles, contractures, ankyloses, and loss or disturbance of sensation and motion. Wounds of the lung may result in comparatively trivial bronchitides and chronic pleurisy or in permanent disabling lung collapse and distressing fistulas, dependent on the type of early surgical treatment. Acute surgery is related to reconstructive surgery. The relationship is maintained solely through efforts directed toward minimizing the quantity of reconstructive surgical effort necessary.

Reconstruction in her turn owes certain duties to surgery. Reconstructive surgery resolves itself finally into the fundamental idea of complete surgery directed toward the restoration of complete function. The antithesis to complete surgery is interrupted surgery. Let us recognize at the very outset the two horns of the dilemma from which later we may be prepared to see both surgery and reconstruction suspended; surgery transfixed by the idea of incompleteness and reconstruction pierced by the fatal idea of beginning only where surgery leaves off. For myself I know but one type of my own specialty of general surgery, I know but one type of orthopedic surgery, or of neurologic, otologic or ophthalmologic surgery. They are all reconstructive.

DISCUSSION

Sir Arbuthnot Lane, London, England, said:

When this war commenced we were fortunate enough to be able to call to our help perhaps the greatest medical organizer that we ever had—Lieut.-Gen. Sir Alfred Keogh. He had already dealt with our medical problems and had solved them in a most remarkable degree. He had been almost all over the world. Criticism could not feeze him, he was met by an outcry because they said he called for too many men, they said he was employing men unnecessarily, but he was obliged to do so. There was at that time a great threatened uprising in India; the public did not know about it, it was kept secret, nobody knew of it at the time. Our medical men rushed in to the help of the country, they gave up everything without a thought of their future. The only qualification that Sir Alfred Keogh insisted on in those men was youth. It was no use to send men past middle age. As time went on, he realized there were two main factors that we had to consider in dealing with men. One was efficiency and the other personnel. In other words, the application of those two principles, specialized function and fixed tenure with the minimum personnel. Finally, under the lead of Sir Alfred Keogh, things began to take shape and we made two great subdivisions, one purely medical and the other surgical. In that way we were able to specialize and establish some fixity of tenure and accomplish the most with the minimum of personnel. We began by collecting these poor fellows who came back from the front with their faces burned and defaced by shot and shell or by flaming fire thrown on them, poor fellows hideously disfigured. The difficulties that we experienced in handling those men in the hospitals arose from the fact that they were unlike ordinarily wounded men. The wounded man of former times who had lost an arm or a leg was received by his family with sympathy and affection and his children hung around him; but these men were so deformed and disfigured that they were disagreeable to contemplate. A man that comes to you with no mouth, no jaw, no eyes, and a cavity where his nose ought to be, is regarded by his wife and children with ill concealed aversion and horror. His loved ones cannot identify him as the object of their affection and regard; they can see no trace of his original features. It was such patients that we had to deal with, and we had to deal with them in enormous numbers. We found men who were willing to devote themselves to this particular labor of love, and the work called for the very best of their skill and attention, They gradually improved those patients in a most remarkable way. But we found that it was a difficult thing to do this in a large hospital, they were a source of distress not only to themselves but to the people about them; so with the assistance of the British Red Cross, which has done invaluable work in this way, we got a large and beautiful domain in Kent, in the very heart of the country, and there we cared for the men where they were secluded from the public gaze. They are only 12½ miles from the great center, London, and are under the care of the greatest plastic and dental surgeons that we possess. Very soon we had there in that particular hospital British, Australians, New Zealanders, Canadians, both officers and men, all working together in the most friendly manner, competing and vying with each other to produce the best possible results for those poor unfortunate creatures.

Surgeon-General Bradley in France has been good enough to send us twelve American surgeons. I need not tell you how delighted our men were to receive them; and they were as greatly delighted to come as our men were to have them come. Two days before I left to come over here they wanted to write and tell you through me how happy and pleased they were to have the advantages of the experience of those men who had been in this work for three or four years and had obtained such magnificent results. Unfortunately the rules would not permit of my carrying that letter, so I give that message to you verbally. As I say, they are all as happy as possible, they are doing splendid work, and they are doing work that will be of enormous advantage to your men. Moreover, they have the advantage of working with men who have been at it now for four years. That work is perfectly new work. We knew nothing about it before this war. It has had to be developed with extraordinary rapidity. These men are taken in hand first by the dental surgeon, who fastens their jaws together and then by the surgeon, who sees to their faces and tries to improve their appearance as much as possible. Probably he takes a piece of bone out of their body, out of the crest of the ilium, for instance, or out of their ribs, and makes new noses for them, using cartilages perhaps to make a framework. In a very little time it is marvelous the things that are done there. There is one enormous advantage that we have got there, and that is the extraordinary interest that our women are taking in the treatment of these patients, as in the treatment of soldiers generally. Perhaps one of the most beautiful sights I have ever seen in the world was to see that old queen mother, who is I suppose the most beloved woman in England, as she went around talking with and consoling the wounded. I am glad to see you smiling with approval, and your smiles are worth a million dollars, and they do not cost a cent! You women of America I think can smile more sweetly than any other women on earth!

We intend to keep before us always that principle of efficiency and economy of personnel as well as specialization of function and fixity of tenure.

Dr. David Silver, Pittsburgh, said:

In a recent lecture Sir Robert Jones said, "The pathetic side of orthopedic surgery is the collection of physical disabilities which should never have been." This is a strong, indeed a startling, statement, yet it implies no criticism of the splendid medical men who are at the front. We all recognize the terrible difficulties under which they are working, and we know that it is and will continue to be impossible to do away entirely with those conditions; but we are impressed with the importance of such an organization that the number of cases which will require subsequent corrective measures shall be reduced to the minimum.

A large part of the orthopedic work to be done will be due to adhesions in and around joints, and to the results of the sequelae of infection. In proportion as the surgeon is able to perform primary or delayed primary suture of wounds, the damage of infection and its danger will be eliminated, and the number of cases of this type will be diminished. This alone furnishes the means of eliminating a very considerable amount of the subsequent reconstructive effort together with necessarily long retention in hospital, not to mention the needless pain and discomfort which the men must suffer.

Among the conditions which the Surgeon-General has assigned to the orthopedic surgeon are malunion and nonunion of fractures. In at least a large number of cases these imply failure in effective focalization or inefficiency in the continuity of mechanical control. In the early days of the war it was recognized that a great deal of the trouble from malunion and nonunion resulted from frequent inspections of the patient at the different dressing stations and from the frequent changes in the type of treatment that was instituted. It becomes, therefore, of the greatest importance that we organize this treatment effectively and decide on that plan of treatment which will be applicable throughout the entire management of the case. It is fortunate that this has already been begun. As you probably know, among the expeditionary force a committee was organized, and it was decided to limit the number of splints used to seven, so that the men who are now in Europe are using an exactly similar method of treatment. A further step in advance, I believe, has been the appointment of seven orthopedic surgeons to supervise the control of splints and the management of nonoperative treatment whenever the injuries are of a somewhat similar character. It cannot be denied that neglect of proper mechanical control in this class of cases has resulted disastrously. Before any operation for the repair of a nerve injury will be undertaken, it is now recognized that the parts supplied by the injured nerve must have their full range of motion. Where proper mechanical control has been instituted from the first, many maltreatments are thereby avoided; and that is being made necessary in order to overcome fractures which have been needlessly allowed to take place. This again implies a uniform plan for the nonoperative treatment of these cases.

Recognizing the conditions which have just been mentioned, the Surgeon-General has planned to place in each reconstructive unit one man who has been trained in the application of the proper mechanical principles and who can grade the cases in which acute surgery plays the most important part in relation to later reconstructive work, not only in shortening the reconstructive period but also in obtaining a much better result.

In the early period of the war, circular amputation was often rendered necessary on account of the prevalence of infection. This naturally called for a later reamputation, with resulting loss of considerable portions of the bone, and in marked contraction of tissues which necessarily took place. This objectionable feature was later overcome by the introduction of stump extension, preventing retraction and conserving a considerable portion of the bone. It is reasonable to hope that in the future it will be possible to discard that necessarily unsatisfactory method of amputation and return to the more ideal amputation methods of civil practice. It is most important that the surgeon produce those results which will be the most satisfactory from the standpoint of the artificial limb. Great attention must be paid to the requirement that there be on the stump the best opportunity for future artificial appliances to be attached. Furthermore, that there be proper attention paid to the care of the stump to prepare it for the application of a temporary appliance. It is now customary to apply such an appliance within several weeks after the healing of the amputation, instead of waiting after the operation for several months for the stump to attain its final form. This not only shortens the period of incapacity but is of distinct value in the mental rehabilitation of the patient.

The Reconstruction Problem as it Relates to Nervous and Mental Diseases

Richard H. Hutchings, Major, M. R. C., U. S. Army, Washington, D. C., said:

One of the surprising developments of the present great war is the importance that mental and nervous diseases have assumed in all the belligerent countries. It was thought that a new disease had made its appearance, and the term "shell shock" was coined. When the patients were returned to home territory and there was opportunity to observe them more carefully, it was soon determined that shell shock is nothing new. It belongs in a well-defined group of diseases which lie between the nervous and mental and partakes of the characters of both, namely, the psychoneuroses. The only way in which shell shock differs from the psychoneuroses encountered in civil life is that the symptoms are to a large extent determined and colored by the sights and sounds of battle instead of by railway accidents, fires, and other scenes of danger common to civil life.

The unprecedented intensity of the present war puts a severe strain on the nervous system of even the most robust. Indeed, it is the nervous system that must bear the brunt of warfare, different from any ever before experienced. Instead of long marches, and campaigns with periods of rest and freedom from danger, we have trench life with constant exposure to danger from the ground and air, broken sleep and the never ending monotony of daily life.

Guided by the experience of our allies, the Surgeon-General determined that in the selection of the American Army, every care should be used to exclude cases of incipient nervous and mental disease and by that means, as far as may be, the disabilities resulting from them.

Well qualified examiners in mental and nervous diseases were stationed at the officers' training camps, the recruit depots and the Army camps and cantonments for this examination. With the exception of some of the organization which went abroad early last summer, all of the men have been subjected to these examinations, and more than 15,000 cases deemed unsuitable for military service by reason of the existence of nervous or mental disease or defect have been recommended to the disability boards for discharge—about 1.5 per cent.

It is too early as yet to say what influence on the health of the Army this elimination of unsuitable material will be in actual hostilities, but we feel sure that many thousand fewer beds will be occupied in the military hospitals by reason of it, and the men who otherwise would have occupied them will be at home doing what they can in industry and helping to support the fighting men at the front.

Notwithstanding the care that has been exercised in prevention by elimination, we shall have mental and nervous patients to care for, and provision has been made for the insane, epileptic and psychoneurotic. At the Government Hospital for the Insane at Washington, temporary buildings are being erected to care for 500 additional patients; General Hospital No. 4, Fort Porter, N. Y., has been set apart for the care of the insane, and when necessary other accommodations will be made available.

In neurology and psychiatry, however, the reconstruction will be almost wholly mental. Practically every soldier who has been confined to the hospital will require some mental reconstruction to counteract what is known as hospitalization—the habit of being idle and dependent, and of being waited on and needing guidance.

The experience already gained in our civil and military hospitals for the insane has shown so well the advantages of work in the cure of the insane that its usefulness is no longer questioned. It is planned to place the work in charge of instructors who have had experience in work of this kind in civil life. These instructors will be commissioned officers in the Medical Reserve Corps and Sanitary Corps. They will be assisted by civilian aides—teachers of arts and crafts, agriculture, landscape gardening, shop-work, and, in fact, all occupations which have been found in the past to be adapted to the purpose.

It is believed that war neuroses, the so-called "shell shock," can be treated most successfully in hospitals apart from other classes of patients. Their symptoms are such as to attract attention—sometimes ridicule, sometimes sympathy. Any notice of this kind only serves to accentuate the condition and prolong the attack. The best results have been obtained abroad by impressing on the mind of the patient that his case is a hopeful one, that recovery will occur as soon as he exerts himself to gain self-control. The well meant visits from relatives and even strangers usually do harm. The patients should remain under a modified military discipline, and as soon as his condition warrants, exercises in the form of drills and marches are to be employed, and in the intervals and also earlier in the disease, while the patient is yet confined to bed, occupation which will serve to divert his mind from his symptoms. Occupation will also aid to gain better control of his muscles, to overcome tremors, functional paralysis and other physical symptoms which interfere with his activity.

A hospital for war neuroses has been established at Plattsburg, N. Y., utilizing the permanent buildings of the Army post which is situated there. It affords accommodation at the present time for 1,000 patients, and other buildings available, after repairs and reconstruction are completed, will have sufficient capacity to afford accommodation, if necessary, for 2,000 patients. There are ample grounds for agriculture and gardening, and shops will be provided and equipped to afford remunerative employment to those patients who are not suited for outdoor work. An officer commissioned in the Sanitary Corps, to be known as educational director, will have charge of these activities under the direction of the medical officer in command. Instruction in various arts, crafts and industries will be provided through civilian aides.

The importance of recreation has not been overlooked in formulating plans for the treatment of these patients.

The objects to be attained in the therapeutic employment of the insane and neurotic are to divert the mind from delusions and morbid introspection into more wholesome channels of thought. The element of interest should not be overlooked. As soon as work becomes mechanical, requiring no exercise of active attention, the mind is free to pursue morbid trains of thought, and the employment results in no further benefit to the patient than perhaps some improvement to his physical condition.

Exactly the same benefit can be derived from play as from work. In fact, the distinction between work and play is perhaps more an economic than a physiologic consideration. Mere diversions, on the other hand, where the patients are entertained by the efforts of others, they themselves remaining passive, are of distinctly less value but have a place, provided the element of interest remains strong.

The best results will be gained by a judicious combination of remunerative work combined with sports requiring activity of mind or body or both, so arranged that the day will be fully occupied for each individual according to his particular requirements.

As convalescence proceeds and the ability for continuous mental application is strengthened, opportunities will be afforded the soldier to prepare himself for his return to civil life and the responsibilties of self-support. The way out of the realm of mental disability has led him to the curative work shop, and through this many find opportunities for increased efficiency and larger remuneration on his return home in the advantages which will be his for taking in the vocational school.

DISCUSSION

Sir James MacKenzie, London, England, said:

If I am to be of any help to the doctors who are engaged in this work, the first thing I would say is to keep your head and exercise common sense. You will discover that these wonderful diseases that have been described are nothing more nor less than those you have encountered in your general practice. Speaking, as a general practitioner, let me say, that you will discover that the principles of treatment that you have employed for yourself and for your patients are the best for the soldiers. You know that when you get tired and overworked or have perhaps some slight illness so that you feel weak and irritable, your wife suggests you should go for a holiday. Wives are generally very wise in these matters. You come back wonderfully recovered. That is the treatment the vast number of these soldiers want when they come back from the front "rattled." In place of simply calling them "rattled," we call them all sorts of fancy names. Simple treatment is what is needed. Arouse the soldier's interest in life and outdoor sports.

I would put recreation in the fore front as a cure for a great number of nervous diseases that effect men. I for one always take care not to speak about things that I do not know, and of shell shock and similar neuroses I will say nothing except that they are a form of what we have long known as neurasthenia. I cannot distinguish them from that, nor can I see that the so-called neurocirculatory asthenia is any different from neurasthenia, at least what we will find in the surgical wards.

The admirable hospital shown us was excellently adapted to the purposes for which it was designed, except that there should be a great space reserved for games. If you study a large number of people you will find that some have the game spirit, others have not. As a therapeutic measure, games have never been sufficiently recognized. I know that I used to avail myself of the curative power of games to a great extent when I was in general practice. In addition to the game spirit there is something which I do not encourage, however, to too great extent—a little bet is wonderfully stimulating.

When the government at my suggestion established a hospital for the study and treatment of cardiovascular diseases, one of the propositions I laid down was there should be sports attached to it, skittles, bowls, croquet or anything else. It was not workable then, and somehow or other they could not get my idea, so my idea has never yet been carried out in a systematic manner. But I have succeeded in getting my men well far more rapidly than those who performed perfunctory exercises in hospitals. The principle that one must avail of in all cases is to get the man out of himself by arousing an interest in sport.

The greatest problem is how to measure properly or assess the value of symptoms. It has never been attacked in a scientific manner. What is the result? Simply guessing. When you say, "This man is not fit," or "This man is fit," you are simply guessing. As an illustration, let me refer to the question of murmurs. They form a large part of the consideration in regard to the mental possibilities of the patient. When through the use of the stethoscope we try to know what the meaning of murmurs is, we search in vain for a clear definition or for knowledge how to assess the value of the murmur. It is laid down as being impossible of assessing. Twenty years ago one of our great physicians in Scotland, Sir William Gardner, in addressing a body of men who were supposed to be specialists in heart diseases, men who examined for life insurance, made this statement, that "Whether it will be possible in the future ever to assess the value of the murmur, I cannot tell. At present we do not know what to do with it. We either reject the candidate or we write him up, or we ignore him; but there is no principle whatever that guides us." Bear that in mind. I would seek to ask you strongly to consider that question whether you should not be able to assess the value of this sign on scientific lines.

I have after thirty-five years endeavored to evolve a principle which will guide you, and if you will carefully understand the meaning of it probably it may help some of you. A man turns up, you discover a murmur or peculiarity, or he has pain, or some other condition, and he wants to know what his future is to be. Now I have devoted the greater part of my life to the solution of that question; it has meant an enormous amount of work, the taking of hundreds of individuals who have had murmurs or pain, and I have kept note and have watched them as they proceeded through life; boys growing into manhood and pursuing military and other occupations; women and girls growing up, getting married, having children, watching the effect of pregnancy, taking a large number of observations, sometimes over a period of twenty-five or thirty years; and I have worked out certain conclusions.

When I write those conclusions down they can be summarized on a scrap of paper about the size of an ordinary page. They are simply common sense rules; for instance, in regard to heart affections you have to consider the efficiency of the heart, how the individual responds to effort—and there is a lot in that last. After all, in estimating the value of any peculiarity it is a matter first of all of common sense.

The essential fact to be determined in every case always is: What can the heart do? What does it do? In answering form questions, in all cases that last and most important question is always left out. That is just as important in the army as in examining for life insurance. When you come to deal with returned soldiers, out of a hundred thousand that will come back from the front you will have 10 per cent. of them invalided out of the army because of some abnormal sound of the heart. Just before the war I had drawn up and Sir Alfred Keogh had recommended for adoption my description of how to assess the value of these abnormal sounds of the heart for the use of the army. Time went on, and it was simply ignored. You cannot begin to teach by a simple memorandum men who were taught on wrong lines in the schools. Just before I left London a typical case came before me of a young fellow who was invalided out of the army because he had a murmur which in my opinion was physiologic. His consciousness of that murmur had broken him down and rendered him unfitted for his work. The consciousness of something of that sort has a most astonishingly depressing effect. I have seen large numbers of such cases. For instance, a farmer came to consult me because he was not able to do his work. I asked him as to his condition, and his reply was vague and indefinite. I said, "What started your illness?" He said that he went up to be examined for the army and was rejected because of a murmur, and he had never been able to work since.

A careful record should be kept by those who are engaged in examining for such symptoms of these people and followed up in their after life to find what happens to them, because there is a great lack of knowledge in regard to what happens to people with these simpler affections. This is an opportunity for advancing the cause of science which let us hope will never come again. But we have here the opportunity to study and classify these cases, and arrive at some conclusions that will eventually enable us to assess accurately the value of these special symptoms. If some of you young men will undertake this work, twenty years hence you will be able to form some idea of the prognosis.

CHAIRMAN BILLINGS said:

The point brought out by Major Hutchings and Sir James Mackenzie I desire to emphasize. I want to drive home, if I may, the fact that these disabled soldiers should have the opportunity for active physical exercise which play embraces. If we have learned anything from overseas it is that active exercise as a physiotherapeutic measure takes the place of passive exercise or massage to a great degree so that active control—military control, if you please—does much more to restore function than passive exercise. Yet of course massage or passive exercise has its place, and particularly for the maimed man. But control cannot alone be used. Active exercise in the form of baseball, football and tennis can be used as a curative measure for these men. If we are to give them this opportunity we must have land enough provided with our general hospitals to have playgrounds as well as work places. We must have paved streets and necessary buildings with appropriate surroundings so as to conduce to the health and spirits of these men. To do this work well the Surgeon-General should have these hospitals located suitably for the purpose for which they are to be used.

Reconstruction of the Defects in Hearing and Speech

LIEUT.-COL. CHARLES W. RICHARDSON said:

The administration of this section of the Division of Physical Reconstruction will be both military and civil. The military staff will consist of a director and assistants. The military staff will be composed of an assistant director, inspectors and a surgical staff in charge of necessary medical and operative procedures. The surgical staff will be the members of the otolaryngologic section of the Division of Surgery of the Head, attached to General Hospital No. 11, Cape May, N. J., or surgeons elsewhere designated by the section of otolaryngology, to perform such operative work and apply those therapeutic resources as the directors of these sections may mutually deem necessary.

On account of the character of the disability in a large percentage of the defects coming under the charge of this section being of such a nature as to require reeducation, it is necessary to have an educational staff to meet these requirements. This staff will consist of: (1) superintendent; (2) principal, and (3) teachers. The superintendent (selected) is to be a man. The person selected to fill this office is a man coming from one of the largest institutes connected with the teaching of the deaf, a person who is thoroughly conversant with the methods employed in all its phases. The principal (selected) is a woman who possesses a keen knowledge of the principles to be employed in the correction of defects of hearing and speech. She has already had a large experience in pedagogic work and in maintaining an *esprit de corps* among her teachers.

As women have in a greater majority than men devoted their energies to this pedagogic endeavor, we have found in selecting teachers that it was wise to accept as candidates for positions as teachers, women well trained in lip reading. We have already listed sixty candidates for positions as teachers for the defects in hearing. These teachers are thoroughly trained in the teaching of the adult hard of hearing, and constitute practically the pick of the United States in this work among those who are able to accept service. We have also listed forty-six teachers who are willing to serve under various individual restrictions. The selection of teachers for corrective speech work has not been so easy a task as the selection of teachers for defects in hearing; nevertheless we have succeeded in selecting some excellent material. We have already listed thirty-seven candidates for teaching positions in this field of endeavor. It is quite probable if there is an increase in patients over what is normally expected that it may be necessary to assign also a principal to the teachers of speech correction.

As it is possible that a colony system of reconstruction may be established later, and as it will probably be necessary to delegate teachers to go to other hospitals to teach patients whose major wounds hold them at general hospitals for full reconstruction, it will be essential to have inspectors to oversee the work. We have in view, already in the service, several male instructors who will make most competent inspectors.

The defects in hearing are acquired in manifold manners:

1. We have those due to the ordinary diseases of the ear, common in civil life—abscess of the ear, both acute and chronic, and acute and chronic catarrh of the middle ear. These are simple infections or secondary to the acute infectious diseases.

Those due to warfare are: 1. Shock concussion. This type of case is most frequently due to the action of a single high explosive shell in the immediate vicinity of the one afflicted. Many of these patients eventually recover their hearing completely. 2. Concussion deafness. These cases are usually due to the continuous action of high explosive and shrapnel shell, hand grenades and the more or less continuous play of machine guns. On account of the continuous concussion transmitted to the labyrinthine structure there are evident organic changes produced in the internal ear with the result of permanent impairment of hearing. 3. The slowly progressive type of concussion deafness as so commonly observed in gunners and artillery men. 4. Traumatic, due to casualties about the auditory apparatus or head.

Defects in speech are: 1. Mutism, most frequently of shock origin. 2. Stuttering, stammering—old cases reestablished; new ones produced during the nervous stress of actual combat. 3. Aphonias, neurotic, overstrain of vocal organs, and due to nerve and muscle lesions. 4. Affections of voice due to gunshot, shrapnel, grenade, bayonet and other wounds of the face and upper air tract.

In considering the various types of injury as the result of war casualties there are two in connection with the auditory and speech organs that bring home to the average layman the horrors of warfare.

The disturbance of the auditory apparatus terminating in immediate or remote complete and permanent impairment of hearing is the most impressive in connection with audition.

In our study of the permanently acquired deafness in the adult in civil life we have been impressed with two important features, not physical, apparently correlated with the loss of hearing, i. e., suspicion and social ostracism. These conditions are in no way physically related to deafness, but are more the outcome of the psychology of the deaf mind and the psychology of the nondeaf mind. The deaf person, not hearing what is said around him, becomes necessarily more or less suspicious that general conversation is directed at him personally or relates to his infirmity. We are all well aware that most normal hearing persons have an aversion toward conversing with the hard of hearing or deaf. Add to the state of mind thus created the torment of the various physical subject symptoms, and you necessarily create in the deaf an unhappy state of mind. Contrast a person so afflicted with one afflicted with blindness. The blind has a serene mind born of the knowledge that all mankind extends to him a helping hand, a confidence begotten through the knowledge that universally mankind sympathizes with and is only too happy to give him succor and aid.

The other condition to which I wish to refer is the modification of the voice which is attendent on the terrible face injuries produced in modern warfare. It is a singular trait of mankind that he avoids the deaf and derides the individual who presents difficulty of speech production. These poor individuals are not only subjected to the humiliation on account of their imperfect vocalization, but are subject to the curious observation and scrutiny on account of their facial defects. How different is the mental view held by the general public with regard to these unfortunates and the blind.

It will be the province of the section of defects of hearing and speech to remove these mental attitudes, first, through reeducation and corrective work with patients, and second, through correction of the misapprehension of the layman.

The section devoted to the defects of hearing and speech has well under way the practical development of its plans. The defects in hearing include all those soldiers and sailors whose hearing, with or without casualties of the auditory apparatus, has been completely impaired or reduced to such a degree that their social and industrial intercourse with others is greatly hampered. Defects in speech include those who stammer, who have loss of voice, or whose form of speech is defective from injuries in the speech-producing organ.

The method of procedure to be adopted in the reeducation of the defects in hearing is through stimulation of the auditory centers in certain cases; through lip reading; and, where lip reading is impossible of results, through manual teaching.

The defects in speech are to be taught along the lines which have been established for the restoration of the neurorespiratory cases. Those cases the result of injuries to the upper air tract and face attended with loss of soft and hard tissues to greater or less extent, will require individual study as to the desirability of further prothesis or operative work for the replacement of lost parts; support and reapplication of attachment for muscles, or release of scar contraction in order to restore impaired voice production.

A careful study is being made of synonyms or homophonous words so that where as result of injury certain single or groups of muscles cannot functionate, that synonym which can be used by the patient may be suggested, and used as a substitute word or phrase in the patient's vocabulary.

The location of the parent school or teaching hospital will be temporarily at General Hospital No. 11, Cape May, N. J.

This department of the Division of Physical Reconstruction is presided over by a director, with the rank of Lieutenant-Colonel, M. C., N. A.

It is very satisfactory to note that the American Association to promote the Teaching of Speech to the Deaf; the Volta Institute; all heads of teaching methods; all institute superintendents, with whom we have had the pleasure of consulting, and all teachers of corrective speech with whom we have consulted, assure us of their hearty aid, support and sympathy, and express their approval of the scope and ultimate vision of the work we have in hand.

Reeducation of the War Blinded

Lieut.-Col. James Bordley, Jr., M. C., N. A., Staff of the Surgeon-General, Washington, D. C., said:

Colonel Richardson, who just preceded me, has made the mistake that is usually made by the world; he has mistranslated the position of the blind. Their attitude is not an attitude of happiness, but rather an attitude of resignation. They are really the Ishmaelites of this century, made so by our economic system. They are unable to procure and maintain their own homes; they have been driven out of the community life; they are not permitted to be a part of any industry. The blind have for centuries asked for a chance, and Colonel Richardson is right when he says they have been extended charity. This is not due to any premeditated purpose on the part of society; it is one of the mistakes of our economic system.

From now on we must conserve, and in nothing is conservation more important than in the saving of human energy. As we reestablish or rebuild that economic system we must remember that the blind are a part of our social fabric, that their brain and brawn must be utilized as an asset to the nation. Strange as it may seem, every great advance in the treatment of the blind has followed in the wake of war, and this war has proved no exception. In England, France and Italy they have suddenly discovered that the blind have a real economic value, and they have started out on a broad scale to study that value, to determine and weigh it; and of all the things that have been produced by this war, none are really more wonderful than the results of their experiments in this direction.

The Surgeon-Generals of our Army and Navy have combined forces, and together they are going to educate the soldiers and sailors and marines. This education is to be given them in a military training school for the blind which is to be located on a magnificent estate in Baltimore. This school is to be conducted by the best teachers of the blind in this country. It is to have every appliance which is known and is available in the development of the powers of the blind. When they complete their courses in that school, trial employment will be given them.

We divide the blind into five classes: those who can work at home, those who can work in blind shops, those who can enter industry, those who can go into agriculture, and the professional classes. We are not going to let any of these blind men get away from us until we know that they are ready to go to work.

We propose to utilize the services of every individual and of every organization which can help in this splendid work. The American Branch Belgian Blind Relief Fund has already come to our assistance in a most substantial way, bringing over $100,000 with which to conduct a certain portion of the work. The American Red Cross, at the request of General Gorgas, has authorized the organization of the Red Cross Institute for the Blind. This Red Cross institute will supply the necessary economic and social supervision for our soldiers, sailors and marines from the time of their discharge from the Army or Navy until they die. This supervision is not to be a charity but a helpful moral support. This institute, for instance, has already organized a purchasing department through which will be bought in quantity, at wholesale rates, the raw materials used by the blind in their homes. They are also organizing a selling department, because one of the great disadvantages of the blind who work at home is the limitation of their market. This selling agency is to take charge of this work of selling the finished products of the blind. It is starting a savings association, because one of the greatest difficulties the blind man has is to get the means wherewith to make his initial investment in material and machinery and tools. This savings association will not only take the man's money and properly invest it and safely keep it for him, but when the time comes for him to work it will be behind him financially and help him wherever he needs help. We recognize that the blind man has three serious difficulties to overcome before he can make his own living: The first difficulty is his own timidity, the second is the misplaced sympathy of his family and friends, and the third is the reluctance on the part of industry to employ him. To overcome his own handicap, we are going to educate him. To help the family to realize the man's ambitions, the man's troubles, to see the necessity for their moral support in his work, we are going to take one member of the man's family to Baltimore and educate her side by side in our school with the man himself. We propose to keep that member in Baltimore in the house that will be conducted by the Red Cross institute at no cost to the family. To overcome the difficulty of the reluctance of industry to employ the blind, we propose to help the blind man demonstrate to industry that he can take his place and do his part.

The speaker now showed lantern slides and commented on them.

On account of the geographic distribution of our Army we are obliged to have two services or plans of work, one in France, and the other in this country. The service in France, so far as blind men are concerned, begins when the man gets back to his base hospital. We have no intention of going forward to that hospital in order to teach him or to help him. So we begin with the service in the base hospital. In that hospital no serious attempt will be made to teach the man how to help himself to make a living. He will only be taught there how to amuse himself. We shall have our professional instructors there, people who can teach him how to play games. Then when he is through with his base hospital treatment and surgical treatment he goes back to the special hospital center which has been designated as the point of concentration for the blind. In this center we shall have our field director for the blind, who will have supervision over all the work throughout the whole of France; under him will be instructors. In this hospital they will go a little further than in the base hospital, and will try to teach him reading and writing and games; in other words, to begin the serious work of making the man realize that he has abilities that can be developed; in other words, to teach him how to shave and dress himself, how to walk with a cane, how to play games, how to write his own letters, and how to read books for the blind. Then we come to the port of embarkation and ocean transportation. Here are helpers or teachers for the blind, who will also teach the men with other handicaps who will come back on the same ships with the blind, so that they can take care of and amuse them also. Thus there will be no point of transition between their work here and their work there; there will be no two weeks of monotony in which they can deteriorate, which of course with the blind is a very serious handicap.

Then we come to the service in the United States. The men come to the port of debarkation, and come into the hospital for distribution. They are summoned before a special examining board which acts as a vocational board. If this board finds that the man's injuries are permanent and nothing can be done for him, he is sent over to our blind teaching school in Baltimore. If they find that he has still efficiency they may send him to a reconstruction hospital. After he has had his surgical work done there and it is found that it is impossible to do anything further for him, he goes to a blind teaching center. This is a military department. It has its instructor who is an experienced man in handling the blind. This is one of the largest institutions in the United States. The instructor is chosen on account of his particular fitness and adaptability. Under him will be teachers and schools and shops of the mechanical and vocational type.

Then after the man finishes his work at the schools we come really to the practical training. After he undergoes his practical training then he gets training in professional work, commercial work, the trades or agriculture. After that work is done then he will take a course in the institute for the blind, and they will follow him in his work in his home for the rest of his life, making sure that his wants are satisfied.

(*End of Morning Session*)

PROCEEDINGS OF THE CHICAGO SESSION

THE SIXTY-NINTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION
HELD AT CHICAGO, JUNE 10-14, 1918

THE MEDICAL MILITARY MEETING

MEDINAH TEMPLE, WEDNESDAY EVENING, JUNE 12

Medical officers of the Army and Navy occupied reserved seats on the stage. The music for this meeting included singing by the audience led by the members of the American Choral Society and accompanied by the Fort Riley band.

The meeting was called to order at 8:15 p. m. by Dr. Arthur Dean Bevan, President of the Association, who said:

Ladies and Gentlemen: This great meeting tonight is a war meeting of the organized medical profession of America to pay homage to the great leaders of the medical departments of the Army and Navy, the Red Cross, and conservation, and to hear from their own lips their call to the medical profession. This meeting is one to which the American medical profession has invited some of the great leaders in medicine of Great Britain, France and Belgium. These countries are allies in this war for civilization. These countries have sent these men across the seas to us at this time as the representatives of their respective countries and their medical professions to tell us their story, to give us the benefit of the lessons they have learned, so that we can make the mobilization of our own medical profession more efficient. We welcome them here as our brothers. We feel that we belong now to one great family. We share with them the same fortunes and the same future. We shall stand by them and by all our allies to the end—and there can be but one end. (Applause.) The right, humanity and civilization will prevail. The medical profession and the country are fortunate that in this great emergency the medical department of the Army is under the leadership of a man in whom the entire profession and the whole country have absolute confidence—General Gorgas. (Loud applause.)

General Gorgas, on rising to speak, was enthusiastically received. He said:

Address of General Gorgas

Mr. President, Ladies and Gentlemen: I am very glad to have this opportunity of speaking to our profession on the subject we have in mind, that is, the accession to the Medical Reserve Corps. We could all understand what conditions were a year ago, and how they are changed at the present time as far as our profession is concerned and their relationship to the military service. A year ago we had about 700 men in the Army; now, we have in the neighborhood of 20,000 commissioned medical officers. (Applause.) The task of getting these 20,000 men into the service seemed a year ago to be stupendous; but we have appealed to all our great associations, and their response has been most prompt and loyal. The result is that we have succeeded most admirably in this first stage of the war.

I wish to express my appreciation for all the profession has done, the organized societies of the country that have helped us; but more particularly do I wish to thank the indi- viduals. We, as a profession, are so accustomed to altruism from the time we are born that we little appreciate ourselves the altruism the rank and file have shown in coming into the Army in this war. The doctor, from the time he first com- mences the practice of medicine, is accustomed without thought to give a larger portion of his time for nothing than men in any other calling. I have often thought why this was. I do not think a doctor is any better man on the average than men of the same education in the community. It has seemed to me that it is the result of his education. From the time he goes into the profession he is taught that it must be done: that the poor and those who are not able to pay must be looked after. The whole community comes to look on it as a duty of the doctor. The doctor is expected to give half of his income in these ways. No other members of the community think of doing this, but it is so general, so universal, that the doctor never refuses; the community has come to look on it as the proper and just thing for him to do. And so I think that our profession in this war has responded to a greater extent and made greater sacrifices than any other branch of the community; I mean sacrifices in the way of responding to the call because a greater percentage of the members of our profession have answered the call than any other class or any other profession, and they have given without stint everywhere. (Applause.) Men have sacrificed their incomes, sacrificed their comforts, and sacrificed their conveniences. Men who have incomes varying from $50,000 to $100,000 a year have given them up for captaincies. It is a great and laudable thing, and I admire it; but these men have saved money and earned independence, so that when they come back they can live on what they have saved. I want, however, to pay my admiration to the rank and file of the profession, the young men with practices of $2,000 or $3,000 a year, with one or two children, with mortgages on their homes, who drop all these things, knowing that when they come back they will have to commence all over again; and yet these men have come to our aid without any hesitation. So far as I can see there is very little holding back of the members of the profession. I do not see it anywhere; but what comes to me is the man who wants to come in, who gives up home and makes great sacrifices for his country. I wish to express my gratitude to our Corps and to our fellow soldiers for what they have done and are doing. I myself have not the slightest doubt that if we need more men we shall get them. There are many more men in the medical profession who are perfectly willing to make sacrifices as necessity appears more urgent and closer to them.

Finally, I am glad to have met you on this occasion, and I wish to express the gratitude I feel for what you have done in the past. I have in my mind the old definition of gratitude, that is, a lively appreciation of favors that are to come. I thank you. (Loud applause.)

President Bevan said:

Great Britain at the time of the war saw her duty. She realized that it was a war of civilization against Prussian domination. She refused to stand aside and see Belgium crushed and France invaded and dismembered. She defended for almost three years not only Belgium and France and her own rights, but also our own. We owe her a great debt; but great as it is and late as we have been, we shall pay it. (Applause.) We are going to stand shoulder to shoulder with her and our other allies to help to win this war. Great Britain has sent us three of her strongest and best known men, and I have the pleasure of introducing to you, first, Sir James Mackenzie. (Applause.)

Address of Sir James Mackenzie

Sir James Mackenzie said:

Mr. President, Ladies and Gentlemen: I cannot tell you how much I feel at the cordial reception which you give us and the cordiality with which we have been received ever since we landed in America. I had the fear when I came here that I would meet a people who were somewhat luke- warm. Your enthusiasm has exceeded anything beyond what my imagination could have thought about. (Applause.) I have had my suspicions that this was peculiarly an enthusi- asm limited to the medical profession, because every medical man that I met was kindness, cordiality and encouragement itself. I have asked them about it, and there is no individual in the whole population that knows the people so well as the medical man. I have asked them time and again how do the people among whom they live look on the war at present, and they have unanimously informed me that the people are just as ardent as they are themselves. Time was when we were under the impression that the American people thought there was not much difference between the English and the Germans; that we are in the war to get something. Now, ladies and gentlemen, I was one of those stupid English peo- ple who trusted the Germans, who never believed there would be a war. I was warned time and again by my friends about what was coming. One of my friends, Professor Sherrington, a great physiologist, came back from attending a meeting of physiologists in Germany in 1912 and told me of the sentiments expressed by the physiologists, that they were preparing for a war against England; that they were going to down the English Navy. Well, I thought I knew the Germans pretty well and I trusted them. When the war broke out, when all of what I had believed regarding Germany was dispelled, I was staggered and said to myself, is this a quarrel between Russia and France? But when Belgium was hit, to whom we had given word that we would stand by her, there was no longer any hesitation of what we should do, and from that time we entered the war with grim determination that never shall the sword be laid down until Belgium, Russia and other countries shall be as free as we are today. (Applause.)

There is great difficulty in understanding why this war should have come about; but as one with open eyes looks on the people he discovers not only the mere tendencies of the people but the curious life of the people themselves which it is difficult to express. We have a common phrase known to Englishmen and Americans of what is a gentleman, a man of honor, of integrity, and of chivalry. The kaiser said he wanted this war fought like a gentleman. Where was his chivalry when he murdered Miss Cavell? Where was his chivalry when he sent to the bottom of the ocean innocent women and children? The word is unknown to the Germans. There is another matter which shows that the Germans have respect for us which they do not like to acknowledge, and a very simple incident will bring that to light. One of my nephews told me in 1915 when he was at the front with forty soldiers in No Man's Land, there sprang out of a trench a small boy dressed as a soldier, who did not seem to be more than 15 or 16 years of age. He came running to a party of soldiers exclaiming, "Take me prisoner; take me prisoner!" The leader of the party said, "Go away, we do not want to take you a prisoner," but he exclaimed, "My mamma told me when I saw English soldiers to hold up my hands and beg them to take me a prisoner." They left him alone, and the poor little German followed them in whatever they did. Whenever they sat down to eat, they gave him some food. When they went back to the trenches the little fellow begged to be taken a prisoner. Can you imagine an English or American mother in such a state of mind that she would want her boy taken a prisoner by the Germans and that they treat that boy as our soldiers treated the German boy? This little incident, ladies and gentlemen, gives you a sort of idea of the difference of thought that runs through the whole system which governs us and the system which governs them. I thank you for the attention you have given me. (Applause.)

President Bevan said:

Great Britain has sent to us with this party one of her great surgeons, one of the men who has been doing outstanding work in the reconstruction of the wounded. I am going to call on Sir Arbuthnot Lane to say a few words to us. (Applause.)

Address of Sir Arbuthnot Lane

Mr. Lane was very warmly received. He said:

Ladies and Gentlemen: I happened to be the honored guest at a dinner party in Berlin on the occasion of Sir Edward Gray's very firm letter to the Germans about the invasion of Belgium. There were present at this dinner party several officers who were infuriated at the course events took. They told me as their guest that if they could have got money from the Jews they would have blown us to hell. They dilated on the great advantage that Germany possessed over England, of how the Germans were such an exceedingly intelligent and cultured nation, and how the English were such a stupid nation. They spoke of how the English had control over the greater part of the world, but they were quite unable and unfit to manage their possessions; that the Germans intended to take all of their possessions, and as soon as their army was strong enough and their navy was big enough, they intended to destroy France first and ourselves afterward. I was amazed at the candor and turned around and expressed my astonishment. I am not sure that there isn't a certain element of truth in our stupidity as a nation. (Laughter.) As you know, Lord Roberts told us what was coming. We did not believe him. When I say we, I mean the large majority of the people in Great Britain. They did not believe it because they could not imagine any nation would be so unscrupulous and dishonorable as the Germans intended to be.

We were fortunate in coming from England in having as our companions some very big men and women connected with industries, and it would be difficult to match these men and women for intelligence and for their grasp of the general situation. It was certainly a liberal education for us and I think we took full advantage of it. They told us they had gone over there to see the suffering and bravery of our noble allies, and the immense losses of the Belgians and the French. The Italians had suffered greatly, and they wanted to realize what we and those nations were doing to help on the progress of the war. They told me that they were coming back to America to tell you of what was being done there and to encourage you to take a more active part in the war than you had done. They amazed me by saying that there were numbers of people in America who took little or no interest in the war, and I said to myself that there must be some mistake somewhere, for wherever I have gone the medical profession has preceded any other profession or any other body of men. (Applause.) But among every other part of the community I found personally that there was the same enthusiasm and same desire to fight and beat our foe. We have a magnificent example in the leadership of that magnificent nation with which we are so closely associated now. I suppose they have got the finest general the world has ever known at present, and the British have the same general confidence in General Foch that you have, and we are perfectly certain that he will lead our armies to victory. We have no hesitation whatever on that point. (Applause.) Those men and women told me the reception they received in England was the very happiest, and they said they left England with the feeling of greatest regret. One man told me after he had been shown around all day long by one of the heads of a department, the man turned around and said, "Will you excuse me for a few moments. This morning I got a telegram that my only son was killed." That is the spirit that pervades us all, and I am sure the Americans will not be behind us in this respect. (Applause.)

President Bevan said:

One of the greatest tributes that has ever been paid to a nation has been paid to Great Britain for the response of her colonies in this war, and I am going to call next on a Canadian surgeon who is serving with the medical service of his mother country in the field, Col. Herbert A. Bruce. (Applause.)

Address of Col. Herbert Bruce

Colonel Bruce said:

Mr. President, Ladies and Gentlemen: I feel a little more at home with you than either of my distinguished colleagues because my earliest experience in this war was in the Canadian service, and there I met hundreds of your countrymen who, when the Germans were appearing on the roads to Paris, forgot about the imaginary line and came over and joined our Canadian forces and helped to add to their fame on the field of battle. We recollect in the dim and misty past some feeling of coolness and at times bitterness about this imaginary line, but thank God the shoulders of your young men and our young men touch as they march against the foe, and the German war lord has realized that the bond of liberty representing the nations of the world has been united stronger than his cannon and more enduring than any war machine that any future autocrat may devise. (Applause.)

Serving in the imperial forces for something like a year and a half, I have had somewhat varied experiences up and down the line from the North Sea to Switzerland, but never in my life have I been as deeply and as profoundly stirred as when I looked into the faces of the tear dimmed eyes of the generous Parisian crowds when they saw coming into their city that great American soldier, General Pershing and his staff. (Applause.) From the base up to the line at the front I have seen your men straining at the leash of discipline which held them back, and you know better than we, for we were on the ocean, of the jolt they gave the German soldiers and German morale in their first engagement a few weeks ago. (Applause.)

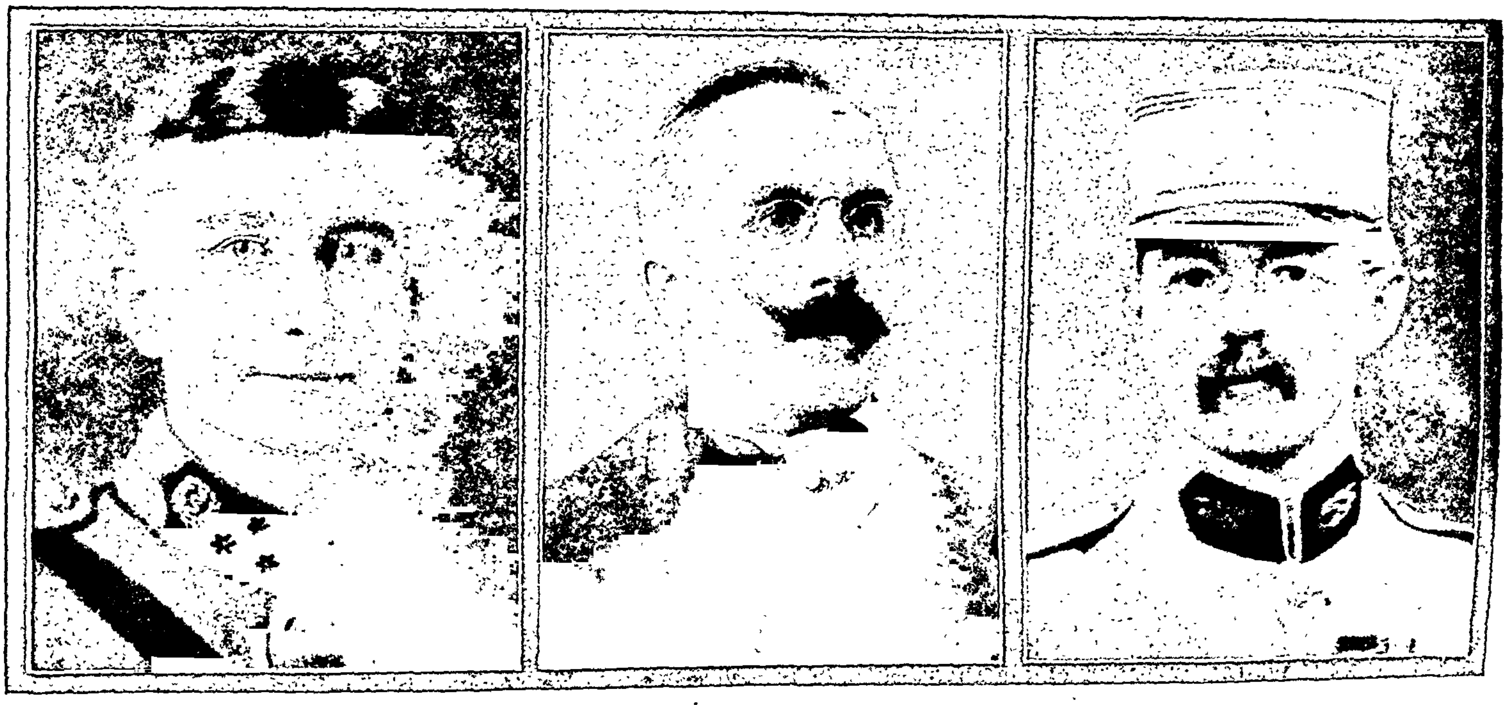
France has had two great emotions—one when the British soldiers came, and second, when the American soldiers came, and France will not forget.

I have had the privilege of visiting all the hospitals which your government so promptly sent to our help, and which are doing such wonderful work for the British sick and wounded in France. You sent us of your best, and it is only necessary for me to mention the names of these well known surgeons to make you realize the excellent character of the work which they are bound to perform:

Majors John Finney and Hugh Young of Baltimore; Majors George E. Brewer, Charles H. Peck, William Darrach, Fordyce, St. John, McCreary and Stevens of New York; Lieut.-Col. Hugh Cabot and Major Harvey Cushing of Boston; Majors Harte and John Gibbons of Philadelphia; Major Fred A. Besley of Chicago; Major Fred T. Murphy of St. Louis, Majors George W. Crile and William Lower of Cleveland, and many others too numerous to mention. I cannot speak sufficiently high of the magnificent work which these doctors and your American nurses are doing.

Before leaving France, Lieut-Gen. Sir Arthur Sloggett, the Director-General of the British Medical Service, sent for me and asked me to tell the American people how much he appreciated the wonderful service which the American doctors and nurses had rendered to the British sick and wounded. He said their work had been beyond all praise. He had been anxious to give recognition to the gallantry and heroism of the American medical officers and nurses serving at the front, and had recommended them for honors, but a regulation of your government prevented their being accepted. Nothing that we can do is too good for the American doctors and nurses serving with us.

Your medical men have willingly taken their places alongside our officers in positions of danger, and have as a consequence suffered casualties in exactly the same proportion as our own doctors serving under the same conditions.



CAPTAIN RÉNÉ SAND
Belgium

M. JUSTIN GODART
France

MAJOR EDOUARD RIST
France

BELGIAN AND FRENCH GUESTS AT THE ANNUAL SESSION

During the recent retirement, although tremendous difficulties were imposed on the Medical Service, the wounded were all safely removed to hospitals in the rear, and none were allowed to fall into the hands of the enemy. The nursing and medical personnel also escaped, although unfortunately suffering some casualties.

If I were to be asked as to the greatest military development at the front during the past year, I would put at the top of the list the creation of a generalissimo to command the united forces, and the brigading of your troops with the British and French into a great united and compact army. (Applause.) And next I would speak of the tremendous war machine that peaceful, unprepared Britain has prepared since the war began. We have heard much, and we do not underestimate the great military power of Germany which she has built up during half a century; but Britain has fought on a score of fronts, has been banker and provisioner to our allies until you took her place. The "contemptible little army" of 100,000 which went over and fought and mostly died was quite unprepared with guns and munitions, and was in the most disadvantageous position as compared with the unlimited supplies which Germany had developed during many years. That small army of 100,000 was replaced by 2,000,000 men, and the meager supply of shells which kept its guns mute for days at a time has grown until the British supply today is more than a match for the Germans. (Applause.) Please consider these facts: Britain's munition works turn out in a single day more big shells than during the whole first year of the war; more medium sized shells in five days than during the whole first year; more cannon in a week than during the whole first year. Her munition plants have a breadth of 40 feet and a length of 25 miles, and these buildings have been constructed so as to be turned into profitable industrial uses when peace returns. (Applause.) And we should not forget that England has increased her steel output from 7,000,000 to 10,000,000 tons; transforming 400,000 motors for carrying munitions and supplies, for the manufacture of agricultural implements, for the manufacture of tanks and railroad engines—in fact, meeting every demand of the war. And no less in her navy have the sailors proved heroes of the war. Every week 5,000 British ships leave or come to her harbors. She has loaned 600 ships to France and 400 ships to Italy. These ships have transported 8,000,000 men to and from her shores, and 10,000,000 tons of war material. Notwithstanding the submarine, her merchantmen sail the seven seas. (Applause.) During the first few months of the war not less than 200,000 women were engaged in war industry; today there are 1,000,000 women so engaged. (Applause.) Of the 4,000,000 workers the women constitute one fourth, and their number is daily increasing, and not less than the men are the girls and women soldiers, heroines. (Applause.) The girls handle the deadly T. N. T. and the still more deadly fulminate of mercury with a steadiness of hand and a smoothness of movement that has demonstrated in every instance they are superior in this regard to men. (Applause.) All grades of society are occupied and every branch of industrial life are all linked together in England's need. Social distinctions have been leveled in the democracy of overalls and caps. A woman worker, whose husband had died at the front, took a day off, and then returned to her work. In the evening the superintendent of the factory found this inscription chalked on one of the lathes: "Done fourteen today; beat that if you can, you devils." (Applause.) Such is the spirit of the women.

I recall the incident when Great Britain sent her expedition to Ashantee, and when a colonel of the Scotch Guards was addressing his men he said to them, "I will not command any one to go on this expedition; there will be suffering; there will be misery; there will be hardships; there may be death. Let every man who will volunteer to follow me take one pace to the front." So saying, he turned his head so as to give the men time to think and to act. Looking around, a flash of indignation went over his face as he saw the line was as solid as it had been before. He turned to his men and said with a touch of scorn, "My God, the Scotch Guards and not a single volunteer." A sergeant, touched to the quick at the rebuke, rushed toward the colonel and said, "Sir, that whole line stepped forward." (Applause.) Ladies and gentlemen, what a great thing it would be for the nations of which we are citizens, for the homes that we represent, for the principles for which we fight—yea, for the institutions which we uphold, if we could all catch that vision and, looking into the face of the generations yet to be, say to them, This has been a bloody business, but the whole line of civilization has stepped forward. (Applause.)

There is a light about to gleam,
There is a font about to stream;
There is a midnight darkness changing into day,
Men of thought, and men of action, clear the way.

(Loud applause.)

PRESIDENT BEVAN said:

The republic of France; glorious France; immortal France. We are proud to be again your ally. In our struggle for independence you made it possible for us to establish for the first time in modern history a government ruled by the people.

We have owed to you for more than one hundred years a great debt; we come to pay it now.

General Pershing, standing before the tomb of Lafayette, expressed the feelings and the emotions of America when, with uncovered head, he said, "Lafayette, we are here." (Applause.) France has sent to us four of her strong men. I shall introduce to you, first, Mr. Justin Godart, who has done outstanding work for the medical department of France in this war. (Applause.)

MR. GODART spoke in French. He referred to the splendid and unselfish work that is being done in France by the American representatives of the Red Cross, and of what American physicians and surgeons were doing, and stated that France and other countries owed America a great and everlasting debt of gratitude for what America had done and was now doing.

PRESIDENT BEVAN said:

I shall call next on one of our French colleagues who comes direct from active service on the Western Front, Major Edouard Rist of France. (Applause.)

Address of Major Edouard Rist

MAJOR RIST said:

Mr. President, Ladies and Gentlemen: On behalf of the French medical profession at war, it is my privilege to address the American Medical Association this evening. To my last day I shall be proud for having had this privilege.

Your Association has always stood for everything that is best and noblest in this, our most noble profession. It has striven to set forth the highest possible ideals and standards of medical education and medical ethics. It has fostered with unequaled zeal the ideals of devotion to mankind. There is no more public spirited body of men in this country than the American Medical Association. What you have achieved during the first fourteen years of peace of this century is, I am sure, the greatest work which any organized profession has ever endeavored to do and has ever succeeded in doing. The present condition of your medical schools, of your hospitals, of your state and city health departments, the value of scientific work which is constantly coming out of your laboratories, are ample testimony to the idealism of your purpose and to the efficiency of your methods. They are an example and a model for the whole world, not only for their intrinsic value but for what they show us. They show what a self-conscious, well organized, democratically organized medical association can achieve when it is inspired by a common ideal and by self-disciplined energy. You have been in the service of your country during peace, and now you are in her service at war. Indeed, the spirit in which your Association entered this war, unreservedly devoting itself to the pursuance of it is, in my opinion, a most fitting symbol of the spirit in which the American nation as a whole entered this war. (Applause.) Your iron will, your clear sighted and unyielding determination will guide and direct the American nation up to the end—and there can be only one end—and there is no more fitting symbol of the perfect friendship and confident cooperation between the nations who are fighting together this great war than the friendship and cooperation which prevails between the medical professions of the allied countries. They are all bent on the same purpose and united in the same feeling of duty toward their country and toward our common cause. (Applause.)

Meetings like this, at which the medical men of the United States, of Great Britain and her Dominions, and of France sit together in order to exchange their observations and views and to learn from each other, used to happen only once in a while before this war. Now, believe me, they are almost daily occurrences, not, of course, on this gigantic scale, nor in such a beautiful hall; but over there in France the medical men of the allied nations are in constant touch with one another. They cooperate daily in every way: in the evacuation work of the wounded, as well as in the medical and surgical care of the wounded and sick, in the equipping and building up of hospitals and the relief of refugees, as well as in scientific research connected with war problems. We have learned to know each other and to love each other. (Applause.) American medical men in France have made a name for themselves, not only because of their professional excellence but because of their perfect courtesy, their delightful simplicity of manner and generosity of heart. I cannot

COLONEL HERBERT BRUCE
Canada

SIR JAMES MACKENZIE
England and Scotland

SIR WM. ARBUTHNOT LANE
England

BRITISH GUESTS AT THE ANNUAL SESSION

tell you how rapidly and how comlpetely you have won our sympathies. The medical men of America have given first to us, even before the American nation entered this great war, and we shall never forget it, and now we have your fighters with us, your boys. What they are doing now on the battlefields speaks for itself. There are no words which can describe it and which can express what we feel about them. Let me tell you just one thing, they are as dear to us as our own boys. (Applause.)

Germany has repeatedly announced to the world that her intention was to separate the allied nations from each other. This she is trying to do by military action as well as by political intrigue and propaganda; but the real outcome of this war is and will be more and more to draw close to each other all the nations who are fighting for the freedom of the world. (Applause.) During the terrific drive which the Germans attempted on the Somme River this March and April, they publicly stated that their immediate aim was to separate the British Army from the French Army; but they succeeded in uniting these two great and glorious armies tighter than they had ever been united, under one supreme command. (Applause.) They succeeded in provoking General Pershing's generous and welcome proposition to blend together American units with British units and American units with French units in the same regiments and in the same divisions. (Applause.) There were three allied nations' armies on the western front. There is only one army now. (Applause.) There is one army made up of the combined strength, skill and courage and devotion of the three allied nations. That is how they separated us.

Ladies and gentlemen; there have been many explanations given of the mental distortion which has made Germany a criminal among the nations of the world. What infringement of the natural laws of moral and mental soundness can be made responsible for an attitude of mind which is so utterly repulsive to us? In my opinion, among the many delusions of which the German nation has been a victim, the most important perhaps is the delusion of growth. Growth is one of the most important and mysterious phenomena of biology. It is beautiful in itself and fascinating to study, but it has its limits, and it has its own end. In every living species there is a specific fixed limit for the growth of the individual, and the perfection of the individual must be realized within these limits. It is the same with the organs within our bodies. Growth which exceeds those limits is not only abnormal and ugly, it is dangerous and destructive. A butterfly which grows to be as big as an eagle would not be more beautiful or more perfect; but a butterfly is just as beautiful and perfect in its small size as the majestic eagle. Now, that is the thing which the German nation cannot understand. Belgium was only a small nation, but just as industrious and as ingenious as the big German nation. It has played a great part in the history of civilization, and it has produced everlasting works of art and of science. But Belgium was just a small lovely butterfly which had not been able to grow as big as the German eagle; therefore, it had to be crushed and trampled under the feet of the German army. Germany has sacrificed everything to the delusion of growth and for the sake of growth, and the other nations have been too slow to perceive it. I need not tell you medical men that there is such a thing as a malignant growth of a tissue or of an organ. It begins invisibly and noiselessly, and no doubt the first stages of a new growth are very interesting to study under the microscope and it makes very nice figures. Have we not been watching this strange and uncanny growth of the German nation with a little too much friendly disinterestedness of the pathologist? But now this malignant growth has shown itself in its true light. We had better call it as the people do a cancer which separates the normal cells from each other, which obliterates blood vessels and destroys and kills. There is only one remedy for this growth—the knife. (Applause.) It is applied now. The surgical team doing the work is the best the world can afford. Great Britain, France, Italy and America are at it. Let them do the work thoroughly so that there shall be no recurrence. (Applause.) Let them extirpate this malignant tumor, this poisonous German growth, lest it should infest the whole body. It is hard work, gentlemen, it will be long work, and it is ugly work; but it has to be done if the world is to be saved and freedom restored. (Loud applause.)

President Bevan said:

Brave Belgium; bruised and tattered Belgium; despoiled and devastated Belgium; outraged and enslaved Belgium, but unconquered and unconquerable Belgium. (Applause.) We and our allies pledged ourselves to free and restore you, and we shall redeem our promise. We asked Belgium to send us that great surgeon so well known to the medical profession of this country, Dr. Depage, whose wife had endeared herself to so many American hearts and who lost her life in the sinking of the *Lusitania.* On account of the military emergency, Depage found that he could not come, but he has sent his right hand, his assistant, Captain Réné Sand of Belgi whom I now introduce to you. (Applause.)

Address of Captain Réné Sand

Dr. Sand said:

Mr. President, Ladies and Gentlemen: Your hearty welcome tells me—and it is not the first welcome since I have been in America—what Belgium means for your country. I will tell you now what America means for Belgium. We did not know you very well before the war. We had heard of your immense resources and of the constructive spirit of your democracy; we had heard of your creative and inventive genius, but we did not know what is most important and the most valuable part in a man as well as in a nation—your heart. (Applause.) Now we know. You have stood by us and for us since the first days of our fight. You have succeeded by a plan that is unique in history in feeding, in clothing and in keeping alive our whole nation during months and months and months across the ocean. You have sent your splendid doctors, your admirable nurses, your Red Cross representatives, but you have done more than that; you have given us your hearts, and today the whole Belgian nation gives you back love for love. (Applause.) Every parcel of food you have sent over, every toy that the American boy has deprived himself of in favor of the Belgian child, every penny you have saved for our children has been not only a material but a moral relief. Every day, for almost four years, you have given to 7,000,000 Belgians that sweet and warm and strong feeling we have around our hearts when we know that somebody cares for us. I will not thank you nor praise you for what you have done. It is beyond praise and beyond thanks. A young brother does not thank his big brother who has helped him; he loves him, and that surpasses everything, and that is how we feel for you. (Applause.) It is in this love which is born from our misfortune and through your generosity that the fraternal love for America and Belgium stands united forever. (Applause.)

President Bevan said:

It is the purpose of the American people to create and maintain the largest and most efficient navy in the world. The medical department of that great navy, that greatest navy, is being splendidly developed by Admiral Braisted, whom I take great pleasure in introducing to you tonight. (Applause.)

Address of Admiral Braisted

Admiral William C. Braisted, Surgeon-General, U. S. Navy, said:

Mr. President, Ladies and Gentlemen: I have been enjoying myself today in going over your magnificent training station at the Great Lakes, and I have come here very tired, but very much enthused over what I have seen. Not having prepared anything special for you, I am going, if you will permit me, to run over a few things that have been going through my mind today. First, the seriousness of the situation, the extent of the problem just before us. You may have noticed a few weeks ago a tendency on the part of Germany, so it seems to me, to attempt to strengthen the bonds of the states which compose the middle Europe empire that she is attempting to make. That is loosely accomplished. An enormous territory has been demanded by Germany. In addition to that, we have the enormous area of Russia, and we have been told that German prisoners taken by the Russians were encouraged to bring about friendly relations, to intermarry, with the idea of creating the feeling that Russia and Germany should be one. So you see we have before us an enemy with tremendous territory, with the possibility of enormous supplies both for food and for material supplies or manufactures with millions of men. I imagine Germany's desire is to create this enormous middle Europe empire, hoping probably to take some, if not all, of the channel seaports. It seems to me, I can see in that extent of her ambition what she is attempting to do. This territory, of course, may be increased over into Asia Minor as that union is very loosely joined, and it will be her attempt to strengthen and demand that, and if that should be done, you see we have against us these millions and these supplies and the possibility of a bitter war being continued for an indefinite time. It has seemed to me that we must be prepared for an indefinite struggle, for a struggle against a bitter foe, a relentless foe, where there is no compromise, and it will take from us every bit of energy and every bit of strength and every bit of tience and every bit of resource that we can possibly assem- e to overcome this struggle we are now in.

In the Navy we have been through something over a year n war. I look back as Surgeon-General of the Navy with great deal of satisfaction on the year that has passed. It as been a splendid year for us; it has been a very active ear. We have been in the war since the first of April a ear ago. In the Navy it has been active warfare. Much as gone on you do not know about, but in time you will e shown the important part that the Navy has been taking n this war, and it has been largely responsible for the success that we have had as far as we have progressed. I view with much pleasure the remarks that have been made about the Medical Corps of the Army and its work. The health of the Navy has been good. We have managed to expand good hospitals. We have hospital ships which we have managed to equip splendidly, including transports, and this work has been done admirably and in a very rapid manner. All this work has been accomplished in the medical department by ourselves. I have asked no help from any one. In time we may ask for help. As yet, we have not asked for one bit of help. That, I think, must show the splendid organization with which we have started, an organization founded on many years of study and of trial, so that I feel we have in the Navy an organization which is complete, and that success demands only material supplies and personnel.

So far as the health of the personnel of the Navy is concerned, of nearly half a million men, it is running about as it does in peace times. At the end of the week of June our casualties, deaths, for all diseases in the Navy was only 2.8 per cent., a very excellent showing for the whole length of the war from casualties due to disease in every quarter of the globe, casualties due to accidents, casualties due to military activity, etc. We have lost out of half a million men which we have now about four men a day on an average. When I first figured that up it seemed to me that it must be impossible that the mortality should have been so small as that. Of course, the conditions that exist in the naval service are far better than you find them in civil conditions in every way. Nowhere can you find sanitation that compares with that we have in the Navy. Ship sanitation must always be most careful and the most improved. Did you ever think of what would happen if contagious disease attacked the fleet and could not be controlled? I have in my time stood face to face with conditions which made me think that the entire fleet would be necessarily affected. To prevent these conditions the utmost care and watchfulness is needed constantly. Very few of you realize the enormous expansion that is going on. Every day something undreamed of or unheard of comes up and is calling constantly not for a change of organization, because we know what to do. We do not have to be told what to do, but the question arises, Am I going to have material supplies to do it with and the personnel? That, gentlemen of the American Medical Association, is where I am going to ask your help. As I have previously said, so far we have done it ourselves. You have heard nothing from the Navy being unequipped. Everything is all right. Everything is fine, but I shall ask your help and your cooperation at any moment when I feel that there may be need of it, and I know as I look in your faces I shall not ask in vain. Everything that can be done by humane men will be done by you to help me in my work in the Navy. (Applause.) But remember this: the Navy has always been ready; the Navy always will be ready, no matter what may happen in this struggle that is going on. We are ready, we are brave, we are strong, and we are resourceful. You need have no fear that your Navy will not acquit itself with credit wherever it may be. (Applause.)

As I went out today to the Great Lakes Training Station I saw the finest and largest naval training station in the world, with 35,000 of the finest young men I ever saw in my life. (Applause.) As I stood and looked at them as they passed in review, the thought came to me, what will be the outcome of this war? And I said to myself, the answer lies in the faces of these boys. (Applause.)

President Bevan said:

In the organization of this country for war, it became early evident that the food problem was a vital one. The conservation of our food resources, the proper division of our own bountiful food supply with our allies was regarded by the government at Washington as a problem of first importance. Probably the most efficient man in the world was secured for this task, Mr. Hoover. (Applause.) Mr. Hoover has called to his assistance many of the ablest men in the country, and the ablest of them all we have with us tonight, and I want to introduce to you Dr. Ray Lyman Wilbur, President of Leland Stanford Junior University. (Applause.)

Address of President Ray Lyman Wilbur

President Wilbur said:

Mr. President, Ladies and Gentlemen: We stand tonight with a catch in our throats watching the great offensive on the other side, for the world is standing breathless today watching the race between the United States and our allies and Germany, and wondering whether we shall have a sufficient number of men in this fight before it is too late. We heard these terrible words from Lloyd George when he said that England was too late at Gallipoli; that England and France were too late to save Serbia, too late to save northern Italy and too late to save great Russia when she began to topple and crumble as no great nation ever crumbled, and the question that stands before us tonight is, Are we to be too late? No one can answer this question, but it is in the minds and the hearts of the American people not to be too late if we are to meet this crisis as it stands. Our safety tonight depends on the integrity of the Italian, the French and British people, and nothing else. (Applause.)

If you will stop for a moment and look back into recent history you will see that the integrity of a people depends on the food supply and on the morale. Hungry people fight only for food. Men are all alike. They have got to eat. When there is no food for the baby, the mother or the wife, men gather together and they tear down the government, no matter whether it be Petrograd or Chicago. We are all alike, and the one vital and fundamental thing is food for fighting peoples. When the Food Administration of this country was organized and we were facing the harvest in 1917, we knew the civilized world was going to struggle in order to go on with its food supply. We have had to devise some method of bringing the American people into that food problem to teach them the necessity of food conservation, the significance of food in war, and the fundamental character of food. Today through a campaign of education and response on the part of the American people, we are going to send out of this country by the first of September 150,000,000 bushels of wheat. Through self-denial the American people have raised 140,000,000 bushels of wheat. (Applause).

Revolutions originate in bread lines. Human beings are all alike. It was the fundamental thing for us to do, and we have sent that wheat and are going to send a sufficient amount of products of beef and other things required. We are going to extend our bread lines wider and wider as the war clouds get darker and darker. The whole thing leads us to hope that the American people can go into this war in the same way that they have the food problem. God has been good to us. Our fields are green. We are beginning to reap the harvest from the crop of 1918. We shall have 300,000,000 bushels of wheat more than we require to send to our allies. (Applause.)

Great offensives are possible when there are great reserves. We have great stores of food in reserve. In the winning of this war, food constitutes a very important factor. I appeal to you members of the medical profession of the United States with your influence among the people to wake up this great country, to stir the people as they have never been stirred before, to make sacrifices and make still greater sacrifices to win this war. Why should we say to France, Go on with this war, when she has lost already 1,300,000? Why should we allow the other nations to suffer large losses without pitching into the heat of battle ourselves when we know that the American people can settle this war within a reasonable time? We have seen what England has done, and we know what we can do; but we must have the spirit, the willingness, the same attitude of self-sacrifice that we have put into the food problem. As I have said, one of the great essentials to meet offensives is great reserves in the way of food supplies and material. It is these things that will count in the end. President Wilson has said, Why limit the Army to 5,000,000? Why not get 6,000,000 or 10,000,000, and ask the people for further deprivation and further self-sacrifice? We have already been told by the fuel administrators that we are 50,000,000 tons short in coal. Are the people paying attention to this problem? If not, they ought to do so because it is a serious matter. Every unit of human energy must be put into this war. Why not put it in soon? I repeat it again, Why not put it in soon? because I feel the medical profession can get at the important things if it wants to do so, and can make the people realize that only by material things can we demonstrate by our spirit that we mean business. We cannot do it with flag waving and by making speeches. Every unit of human energy must be put into this war by the men and women of the country in order to bring it to a victorious end for the allies. We have got to make the men on the other side feel that the hearts of the American people beat with them, and we must get the material things over there—ships, food supplies, and everything necessary to establish absolute confidence, so that we can hold up their morale and make them realize that our hearts beat in unison with theirs. When that has been done, we can exclaim, Hold that line, you courageous men of sunny Italy, you brave men of France. Hold that line, you noble men of Belgium. Hold that line, you stalwart boys of America! Hold that line until we get the men and guns, so that all together we can crash our way through the western front and settle this war against our ruthless, barbaric foe, Germany! (Loud applause.)

President Bevan said:

When this program was arranged we asked Italy to send us a delegation of their best men. I am sorry to say, at the last minute, Bastianelli, the great Italian surgeon, wired us that on account of the great activity on the Italian front it was impossible for him to be with us here at this meeting. But our hearts are with Italy, and their hearts are with us, and I want you tonight by a rising vote to give me authority to send to Bastianelli and through Bastianelli to our Italian colleagues our greetings and be of good cheer, because we are coming to help them win this war. (Applause.) (The entire audience arose and cheered lustily for Italy.)

President Bevan continued:

On the battle line in the starving countries invaded and devastated by the enemy, in the countries sickened with plague and pestilence, in our own mobilization and everywhere throughout the world is an angel of mercy giving succor to these great armies under the banner of the Red Cross. (Applause.) We have with us tonight one of the men who for more than a year has led the American forces of the Red Cross in France—Major Alexander Lambert. (Applause.)

Address of Major Alexander Lambert

Major Lambert said:

Mr. President, Ladies and Gentlemen: America perhaps distinguished herself when suddenly called to war by going into the war Red Cross hand first. She did not have an army to send, and she sent as rapidly as possible the Red Cross, which is the other arm of her army and the arm of the government. I think very few of you realize how much of a governmental function the Red Cross really is. It is usually looked on as a private society to give volunteer aid to the wounded and to care for the sick, or to stand ready at any time in calamity to help those in dire need. In reality, it is a governmental function—yes, founded on international treaty, incorporated by act of Congress, under the command of the President of the United States, as is the Army and the Navy, and in its incorporation it says that, besides being prepared to give voluntary aid to the sick and wounded, it is the society, and the only society, through which the people of the United States give voluntary aid to their Army and Navy in time of war. That voluntary aid is simply that which any friend would do to help any other friend or any human being in distress. This, in brief, is the work of the Red Cross, and what it is doing and has done is to build up in France an organization to look after the sick and wounded and to render aid to citizens wherever possible.

It has been my fortune to go from the North Sea in Belgium down through the entire front line, down and back to the line, and down into Italy as far as Rome itself. I have no stories of excitement to tell you. It has not been my lot to go into that form of life. It has been a matter of fact work to do and of duty done.

I have often been asked by persons what one's feelings are under fire. What is it that you feel? True it is, for the last two or three months in Paris we have been under a constant queer bombardment of a long range gun which drops a shell in Paris every twenty minutes that explodes without warning and without any previous idea when it was to come or where it was to go. Some nights this cannonading would begin as early as 1 in the morning and keep up all night, and then perhaps cease for a day. The feelings of the boys under fire is perhaps best expressed by one of the engineers at Cambrai. After a battle, an English officer, who complimented him on the efficient work he had done, asked him if he had ever been under fire before, and he replied, "No, sir." "What do you think of it?" said the officer. He replied, "I didn't mind it much, but I noticed it took my mind off my work." (Laughter.) That I think is the best description of a soldier's feelings under fire.

The Red Cross has built up its hospitals to care for the sick and wounded or any other Americans in France. It is built up to care for certain hospitals in conjunction with the Army. The Red Cross is now taking care of the American wounded coming down to the end of the Montdidier line. Besides that, it cares for the refugees. It cares for the people of France, that it may help them in their work, because the Red Cross has as much to do with the Allies as it has to do with its own people and with the Army which you sent there. It has found that it could hearten the people. It is not the nation fighting as an army sent forward to fight another army that is going to win, but it is the fact of nations fighting together, and the civilian population that can hold out the longest and stand the strain will be that population which will win the war. The ones that give in first will lose it, and that we must remember. You must learn to realize that you have to bear the great strain coming on you, and that strain will be tremendous compared with what you have already undergone. Your Red Cross has heartened the people among which it lives in caring for the refugees and in giving them attention as the necessity arose.

In the last drive, for instance, in March, back of the line, as they came down toward Montdidier the strain became very great, and the wounded were rushed back in such numbers that the hospitals could not care for them, so it was the duty of the Red Cross to load the motormen's trucks in Paris and have them take surgical dressings that had been made to the wounded. We took the surgical supplies out of Paris to the wounded men to meet the needs of the hour. Strange as it may appear, the Red Cross found some hospitals improvised and the men in them working beyond the power of human endurance. It found them without anesthetics, without any surgical aid whatever. The Red Cross gave them aid. It gave them dressings; it gave them every necessary thing it had and so it fulfilled its mission in caring for the hospitals. The Red Cross is caring for the wounded, in helping to give them those things which the doctors and nurses do not find time to give to the sick. That is one of the things that one friend would do to another in hospitals where there is so-called social service. The Red Cross is everywhere working for and working with to help the boys you have sent across the seas. We are aiding them in the way you would wish them to be aided.

There is a tradition in France that none of the statues of Jeanne d'Arc have been destroyed, and wherever you go it is true. Along the front lines these statues seem to have borne a charmed life for they are still apparently untouched. There is one charming statue at Compiègne facing the hills beyond the line where an attack is now going on. It is only a few miles behind the line. It is the charming statue of a young girl, standing, and holding a flag in her hand. Her face is lifted up in earnestness. As I looked at this statue in the twilight, there she stood calling to those of us to come and help her people. There she stands seemingly as imperishable as the valor of her people. Will you not harken to her call? Will you not realize the moral effect, great as it is? Will you not realize the great effort you have made, and that you must make still greater efforts? Will you not harken to this little maid of France and help her? Will you not arouse your people to come to the aid of her people? I believe you will. (Loud applause.)

THE PATRIOTIC MEETING

AUDITORIUM THEATER, THURSDAY EVENING, JUNE 13

The patriotic meeting of the Association was held, June 13, at 8:30 p. m. Several patriotic musical selections were rendered by the Great Lakes Naval Training Station Band. Bob Dyrenforth sang patriotic songs, with the audience joining in the chorus.

Dr. Ludvig Hektoen, in calling the meeting to order, said: You are the guests of the Chicago Medical Society, the local branch of the American Medical Association, and it is as chairman of the Committee on Arrangements that I bid you welcome.

In former years it was customary at the annual meeting of the American Medical Association to hold a President's reception on Thursday evening. Since we entered the war it has seemed better to replace this nonessential function with a patriotic meeting as befitting the spirit of the times. Tonight there will be presented to you other subjects of the greatest importance in relation to the war.

Science and the War

Prof. John M. Coulter, University of Chicago, was introduced as the first speaker of the evening, and spoke on "Science and the War." He said in part:

In presenting such a subject as science and the war, one must choose between a somewhat detailed account of the services rendered by the different sciences and a very general statement which omits details. A few samples of the emergency problems that have come to the National Research Council, however, may give a better conception of the range of such work. All sciences are contributing to the prosecution of this war. Some of them entered into it in a more spectacular way than others, but all of them in a real way. The great profession represented in this meeting is a conspicuous illustration of service so obvious and immediate that it is perhaps better appreciated by the public than are the other fields of scientific service.

Among the emergency problems referred to for fields of scientific investigation may be mentioned a few samples. To physics has come such problems as the detection of submarines, adequate range finders, and improvement in wireless apparatus. Chemistry is dealing with the absorption of noxious gases, synthetic drugs, new specifics, the preparation of special military maps, indexes of military zones, interpretations of topographical maps, and so on. Geology is interesting itself in the description of camp zones, in the recognition of adequate water supplies, in the materials for right building, and in sources of necessary materials. My own work on the National Research Council has had to do with problems relating to plants and the uses to which plants are put through raw products of all kinds. We are discovering what we have of the newer stock in hand, which is far greater than we imagine. The most pressing plant problem is that connected with food production because everything else depends on it. For years our rate of increase in food production had been falling rapidly behind the rate of increase in population. Such a disparity between the two rates of increase could not be allowed to continue if there was no war; but when the war came, as you know, the problem became tremendously more acute. It was discovered that the chief reason for this lack of food production behind the population was a lack of cooperation, that is, a failure to apply the knowledge already available in reference to the most effective methods of handling plants. Isolated investigators in various parts of the world solved important problems, but the results were never brought together and focused on our great need. It has been discovered that the knowledge now available, if applied to the result in food production, would overtake the population if there had been such scientific cooperation in the years that have gone as exists today, and we would not have heard of wheatless days. All of these restrictions of our food administration are simply to help us bridge over this transition. Cooperation is the only method not only to render effective service but also to secure scientific results. Science in this war represents training that is of immense service in meeting emergencies. It has not restricted itself to superficial progress, but has been dealing with fundamentals, and its range of application is wide, and it offers this training because more than anything else it is patriotic, not in the Prussian sense but in the sense of international cooperation and service. (Applause.)

The Law and the War

Judge Charles S. Cutting spoke on this subject. He said in part:

We lawyers are taught to believe in the sacredness of contracts, and all of us Americans ought to be thoroughly imbued with the idea that a solemn compact, whether it be between men or between nations, is something which is made to be kept and not to be violated at will. Military necessity, like any other necessity by one of the parties to an obligation, is an exceedingly convenient way to violate absolutely a solemn agreement. Who is the judge as to military necessity? The power that invokes it and it alone. This throws to the winds all idea of fairness, of justice, of right, of law. Law is the cement which binds together civilization, and without it we relapse into savagery, and savagery is followed by the desecration of the law.

When our great Army shall have come home, let us hope that it shall have on its face, "This world is now safe for democracy, and a world fit to live in. It is of the people, for the people and by the people"; and when that day arrives, I am sure there will go up such a shout of joy from San Francisco to Boston, and from the Lakes to the Gulf that the world will know that the great power that exists for right, for law, for constitutional liberty has spoken, and that the die is forever cast. (Applause.)

President Bevan said:

This is one of the largest and most successful meetings the American Medical Association has ever held. I want to call your attention in a few words to the flag that hangs in the back of this hall, the service flag, with 23,146 stars. This is the service flag of the American Medical Association and represents the number of physicians who have gone into the service.

American Ideals

Bishop Charles P. Anderson spoke on this subject. He said in part:

Whether we be doctors or priests, lawyers or professors, farmers or artisans, soldiers or civilians, rich or poor, or whether we have decorations in front of our names or after our names or not, we are primarily men—men who have been made in the image of God and men who will be measured not by their titles or decorations or positions, but by their moral bulk and their constructive energy for the betterment of the human race. The danger in a professional life is that we are apt to become stilted and mechanical and lose the dignity of the man in the routine of a profession. No profession ever became a great profession until it had produced a great man, and no great man ever lived apart from great ideals. It is about ideals that I shall speak to you tonight, especially as they are represented in American life and thought and action.

We have witnessed during the last year the expansion of a great moral conviction among the American people. The rank and file of our citizenship is not familiar with the intricacies of international law. We are certainly not familiar with European bunglers. Candidly, we are not much interested in these aspects of the case; but we have certain old-fashioned ideas of right and wrong. Our people have been asking themselves for a year, Is it right or is it wrong to do certain things? Is it right or is it wrong to break your word, to violate a treaty? Is it right or is it wrong for the strong to oppress the weak? Is it right or is it wrong to bring about wholesale murder of human beings for any military purpose whatever? Is it right or is it wrong to instigate barbarous practices that shock the individual conscience, even of the savage? And the American conscience is answering these questions in this way: Those things are wrong and they will have to be set right. We have ideals, and we have faith in our ideals. We are ready to make sacrifices for our ideals, and if the submarine does come close to our shores and threatens, or if the drive over there in France should seem to penetrate through that line, and if that should be followed by propositions of an ignoble peace, we will answer back as did John Paul Jones when he was sorely smitten and threatened of being overcome, "Oh, thou enemy, we have not begun to fight yet." (Applause.)

THE HOUSE OF DELEGATES

Third Meeting—Thursday Morning, June 13

The House of Delegates, in accordance with the action taken at the meeting held on Tuesday afternoon, met at 8 a. m. and was called to order by the speaker.

Dr. D. Chester Brown, Connecticut, chairman, presented supplementary reports of the Committee on Credentials, stating that ten additional delegates had registered and were entitled to seats in the House of Delegates, and recommended that they be seated.

Dr. V. G. Vecki, California, moved that the report be adopted. Seconded and carried.

MAJOR ALEXANDER LAMBERT, M. R. C., U. S. ARMY
PRESIDENT-ELECT OF THE AMERICAN MEDICAL ASSOCIATION

The secretary called the roll and recorded 117 delegates present.

The minutes of the previous meeting were read and approved.

Election of Officers

The next order of business being the election of officers, the House proceeded to an election, which resulted as follows:

President - Elect — Alexander Lambert, New York.

First Vice President —William N. Wishard, Indianapolis.

Second Vice President—E. Starr Judd, Rochester, Minn.

Third Vice President —C. W. Richardson, Washington, D. C.

Fourth Vice President—John M. Baldy, Philadelphia.

Secretary — Alexander R. Craig, Chicago.

Treasurer—William Allen Pusey, Chicago.

Speaker of the House of Delegates—Hubert Work, Pueblo, Colo.

Vice Speaker of the House of Delegates—Dwight H. Murray, Syracuse, N. Y.

Members of the Board of Trustees—Frank Billings, Chicago; Wendell C. Phillips, New York; Thomas McDavitt, St. Paul; and, to fill vacancy caused by the death of E. J. McKnight, for a term expiring in 1919, D. Chester Brown, Danbury, Conn.

Members of the Judicial Council, for a term of five years—W. S. Thayer, Baltimore; to fill the vacancy occasioned by the election of Alexander Lambert, New York, as President-Elect of the Association, whose term would have expired in 1919, M. L. Harris, Chicago.

Members of the Council on Health and Public Instruction —For the term of five years, to succeed himself, W. S. Rankin, Raleigh, N. C.; to fill the vacancy occasioned by the election of Frank Billings, Chicago, as a member of the Board of Trustees, whose term would have expired in 1921, Ludvig Hektoen, Chicago.

Member of the Council on Medical Education—For the term of five years, to succeed himself, Horace D. Arnold, Boston.

Member of the Council on Scientific Assembly—For the term of five years, to succeed himself, Roger S. Morris, Cincinnati.

The secretary presented a list of applicants for associate fellowship endorsed by the Section on Stomatology, and stated that this is the only list which has so far been transmitted to him from any of the sections.

Dr. E. Eliot Harris, New York, moved that the secretary be authorized to cast a ballot for the House of Delegates in each instance, not only of those applicants endorsed by the Section on Stomatology, but also for those applicants who may be endorsed by the other sections of the Scientific Assembly in which the applicant is not eligible for membership in the state association of the state in which he resides, and provided no objection to the applicant is filed by the officers of such state association. Seconded and carried.

Place of Annual Session

Dr. Thomas McDavitt, Minnesota, chairman, stated that there had been presented to the Board of Trustees from its Committee on Place of Annual Session two cities which are adjudged to be suitable for the accommodation of the annual session of the Association. The Board of Trustees transmits to the House of Delegates these two places without recommendation. Since the last meeting of the Board of Trustees, a third such city has been suggested and is included in the list presented, in order that it, too, may be considered by the House of Delegates. These three places suggested for the next Annual Session are Atlantic City, N. J.; Hot Springs, Ark., and Philadelphia.

Dr. Wilmer Krusen, Pennsylvania, withdrew Philadelphia from the list of places to be considered.

The advantages of both Atlantic City and Hot Springs were presented in a discussion, which was taken part in by Drs. W. T. Wootton, Arkansas; Wilmer Krusen, Pennsylvania; E. Eliot Harris, New York; H. G. Wetherill, Colorado; G. F. Cott, New York; C. P. Meriwether, Arkansas; F. D. Boyd, Texas; Otto P. Geier, Ohio, and Dwight H. Murray, New York.

A ballot was then taken, which resulted in the choice of Atlantic City, N. J., as the place for the next annual session of the Association.

Dr. George H. Kress, California, moved that the time for holding the next annual session be referred to the Board of Trustees with power to act.

Seconded and carried.

During the progress of the election, Dr. E. J. Goodwin, Missouri, moved that when the House adjourns, it adjourn with the members standing for a few moments in silence, with heads bowed, in respect to the memory of Dr. E. J. McKnight, a trustee, and to those members of the Association who have lost their lives in the service of our country.

Seconded and carried.

Supplementary Report of the Reference Committee on Legislation and Political Action

Dr. M. L. Graves, Texas, chairman, presented a supplementary report for the Reference Committee on Legislation and Political Action, as follows:

The report of the War Committee has been duly considered and we feel that commendation is due the officers of the American Medical Association for their prompt recognition of the opportunity for service to our country during this war and their loyal tender of this service to the officers of the government as well as for the good work accomplished, which has been graciously acknowledged by the Surgeon-General. We feel that the House should further assure the government that all its officers and organization will cooperate fully with and serve the government whenever desired.

The following resolution was presented by Dr. V. G. Vecki, California, and was referred to your Reference Committee on Legislation and Political Action.

Resolved, By the House of Delegates of the American Medical Association, at its annual session at Chicago, 1918, that in consideration of the impending emergency and in consideration of the indisputable fact that all interests are secondary to the winning of the war and the relief of the wounded soldiers, so splendidly fighting for our country, action be taken provisorily to establish an undergraduate class of medical men, who would have no claim to be licensed to practice medicine after the war without proper additional education as provided by present regulations.

Your Reference Committee believes it unwise to offer any inducement to undergraduates in medicine to abandon their studies, but on the contrary would urge all students to complete their medical courses and thus become qualified to render a far more efficient service to their country.

The committee therefore recommends that this resolution be not approved.

In addition, the following resolution from the Section on Stomatology was transmitted to the Reference Committee on Legislation and Political Action.

Whereas, It is highly probable that all hospitals and dispensaries may in the near future be called on to receive, treat and care for disabled American soldiers, it is recommended by the House of Delegates of the American Medical Association in session at Chicago, 1918, that all physicians of German and Austrian citizenship (including those having only their first naturalization papers of American citizenship) should be dropped from those hospitals receiving soldiers during the period of the war.

Your committee feels that the suggested action may be safely left to the judgment of the governing bodies of the hospitals themselves.

Dr. Eliot Harris, New York, moved the adoption of the report. Seconded.

After discussion by Drs. V. G. Vecki, California; E. Eliot Harris, New York, and G. F. Cott, New York, the motion to adopt was put and carried.

Supplementary Report of Reference Committee on Hygiene and Public Health

Dr. J. W. Schereschewsky, U. S. P. H. S., chairman, presented a report from the Reference Committee on Hygiene and Public Health.

The first section of this report was read and a motion to adopt was made and seconded. This motion was discussed by Dr. Otto P. Geier, delegate from the Section on Preventive Medicine and Public Health, who moved an amendment which was accepted, when the motion as amended was put and carried. The section of the report as amended and adopted is as follows:

In accordance with the directions given to the Reference Committee on Hygiene and Public Health, at the last meeting of the House of Delegates, your committee submits the following resolution concerning animal experimentation and recommends that it be adopted by the House of Delegates.

Whereas, The usefulness and, indeed, the imperative need of animal experimentation has been fully established by the improvements in sanitation resulting in the striking difference in the health of troops in this as contrasted with former wars; in the practical abolition of the dreadful wound tetanus; and in the vast improvements in the results of wound treatment; and

Whereas, Further animal experimentation is absolutely necessary for the conduct of the war for the further protection of the gallant soldiers who are risking life, limb and health for our safety; and

Whereas, Animal experimentation is absolutely necessary for meeting effectively the practice of the enemy in using poison gases; therefore be it

Resolved, That the House of Delegates of the American Medical Association in convention assembled at Chicago, Illinois, hereby reaffirms its belief that properly regulated animal experimentation is necessary for the sake of the public health; that the necessity for such animal experimentation is greater and more urgent at this time than ever; and that those who interfere with it in any way, thereby interfere with the conduct of the war and fail in the gratitude owing to our defenders.

The Reference Committee on Hygiene and Public Health reports further that it has had referred to it the following resolution which was adopted by the Section on Diseases of Children:

Resolved, That the War Council of the American Red Cross be asked to appropriate $100,000 for the purpose of better child welfare work, assisting existing organizations working in child welfare, and organizing this work when approved by the Medical Advisory Committee of the American Red Cross. This sum to be expended under the direction of the said committee.

Your committee recommends that this resolution be adopted.

Respectfully submitted by order of Reference Committee on Hygiene and Public Health.

J. W. Schereschewsky, Chairman.

It was moved that this recommendation of the committee be concurred in.

Seconded and carried.

It was then moved and seconded that the report of the Reference Committee on Hygiene and Public Health be adopted as a whole. Carried.

Supplementary Report of the Reference Committee on Constitution

Dr. Floyd M. Crandall, New York, chairman, presented the following supplementary report for the Reference Committee on Amendments to the Constitution and By-Laws and moved the adoption of the report. Seconded and carried. The report follows:

A communication presented to the House of Delegates on Tuesday, June 11, by Dr. W. T. Wootton of Arkansas, relative to the standardizing of surgical procedure and medical practice, was referred to this committee for action. While the communication proposed the appointment of a standing committee and hence a change in the By-Laws, it dealt with other matters foreign to the work of this committee, and it recommends that it be referred to the Judicial Council.

Respectfully submitted by order of the Reference Committee.

Floyd M. Crandall, Chairman.

Report of Reference Committee on Sections and Section Work

Dr. John D. McLean, Pennsylvania, chairman, presented the following report of the Reference Committee on Sections and Section Work:

The members of the Reference Committee on Sections and Section Work have very carefully studied the report of the Council on Scientific Assembly and have found a diversity of statements in the report. They find no record of any definite recommendations, but have been much impressed with the statement, "We are accused, and the Council on Scientific Assembly believes this is a just criticism, of devoting too much time to scientific work and too little to social enjoyment and getting acquainted with each other."

We find on referring to the program of the Scientific Assembly and to the meeting of the House of Delegates that there are nineteen separate and distinct sections of our association meeting during five days, as follows: House of Delegates, general meetings, scientific exhibits, and sixteen scientific sections. We therefore appreciate the significance of this statement that much time is devoted to scientific work, leaving very little for pleasure and getting acquainted.

We also find that a resolution has been handed to us requesting consideration of the creation of a new section on industrial physicians and surgeons, making additional scientific work. There would then be twenty distinct parts of the association meeting during the five days. We find also, on referring to the program, that there are 562 speakers listed to address the physicians in attendance. This does not include meetings of the House of Delegates or meetings on Wednesday and Thursday evenings.

As a result of all this, we find it impossible to make any definite recommendation to become operative at the next session, and as this involves every member of the Association in attendance, we would recommend that this House of Delegates direct the Council on Scientific Assembly to carefully study this problem and form a definite plan of procedure for future meetings. We would also recommend that the committee be directed to forward the suggested plan of procedure to each member of the House of Delegates, for the next session, at least two weeks prior to the first day of the meeting of the House, and that the report of the Council be submitted to the House of Delegates at the next session for definite action.

The following resolutions have also received consideration:

WHEREAS, Industrial medicine and surgery is rapidly becoming an ortant special field of medicine, and

WHEREAS, The American Association of Industrial Physicians and Surgeons of over 500 members has been in existence for three years, and

WHEREAS, The industrial physicians and surgeons form a group of the profession making a large contribution both to medicine and to the conservation of man power; now be it

Resolved, That the American Medical Association recognize these facts and give their designation of Industrial Physicians and Surgeons to those properly qualifying for this title, and that they be so designated in the Directory of the American Medical Association; and be it further

Resolved, That the Committee on Sections consider the advisability inviting the American Association of Industrial Physicians and Sur- us to become a section of the American Medical Association.

Your Reference Committee would recommend that the first resolution be referred to the Board of Trustees with favorable recommendation, and that the second resolution be referred to the Council on Scientific Assembly for consideration in the proposed plan of procedure to be submitted to the House of Delegates at the next session.

John D. McLean,
Guy L. Connor,
Frederick T. Rogers,
Thomas Holloway,
G. A. Moleen.

It was moved that the report be adopted.

Seconded and carried.

Supplementary Report of the Reference Committee on Reports of Officers

Dr. H. G. Wetherill, Colorado, chairman, presented the following supplementary report for the Reference Committee on Reports of Officers:

As regards the report of the Judicial Council, your Reference Committee agrees that it is inadvisable for the medical profession to depart from its traditional principle, namely, that physicians should not derive pecuniary profit from patents on articles for the relief of the sick. This principle is endorsed and reaffirmed, chiefly because it represents the highest ideals of our profession; but it may be noted also that it is one of the foundations of the confidence of the public in the profession, and one of the chief reasons why funds have been given liberally for medical research. Every discovery of the future utilizes the results of these past gifts, and therefore has obligations toward them.

The case is not quite as clear when profits derived from such patents are to be used for the benefit of the public, and not for private gain. This is permitted by the rule of 1916, under which we are now working; and whether this rule is wise or unwise, it could not fairly be revoked in reference to the present case, since this would constitute retroactive legislation.

It must also be pointed out that the Association has no jurisdiction over the University of Minnesota, and therefore the question of what this university should do or should not do does not seem to be a subject for action by this body.

Under the circumstances, it appears that this body may reply to the request of the University of Minnesota by informing it of its own general policy, as above expressed, and leave the adoption and application of these principles to the university.

Finally, it is to be clearly understood that no member of the medical profession is to derive pecuniary profit from the patent; and that the Reference Committee assumes, without hesitation, that the offer of the Mayo brothers was made in a spirit of altruism.

We therefore recommend that the present status be maintained, under the resolution adopted by the House of Delegates at the Detroit session in 1916, and that a copy of this report and of the report of the Judicial Council be forwarded to the president of the University of Minnesota and to Drs. William J. and Charles H. Mayo.

H. G. Wetherill,
F. E. Murphy,
S. R. Roberts,
Torald Sollmann,
H. B. Gibby.

At the conclusion of the report, Dr. Wetherill moved its adoption.

Seconded and carried.

Report of Committee on Reapportionment

Dr. Edward B. Heckel, Pennsylvania, chairman, presented the following report of the Committee on Reapportionment:

Your Committee on Reapportionment of Delegates presents the following report, in accordance with Article 5, Section 2, of the Constitution, which provides that "the total voting membership of the House of Delegates shall not exceed 150. The Medical Departments of the Army, of the Navy, and the United States Public Health Service, and the Scientific Sections shall each be entitled to one delegate." This leaves 132 to be apportioned to the constituent associations in proportion to their actual membership, which entitled each 800 members or fraction thereof to one delegate. This makes the voting membership of the House of Delegates 145, and according to the Constitution and By-Laws the apportionment will prevail for three years. The number of delegates to which each state is entitled, in accordance with this ratio, is as shown in the accompanying table (see page 1943).

Respectfully submitted.

Edward B. Heckel,
Philip S. Roy,
John Ridlon,
Arthur D. Bevan, President,
Alexander R. Craig, Secretary.

At the conclusion of the report, Dr. Heckel moved that it be adopted, with the proviso that the secretary be authorized to correct any errors in it.

Seconded and carried.

Dr. J. W. Schereschewsky, U. S. P. H. S., chairman, presented the following resolution, which is transmitted from the Section on Preventive Medicine and Public Health, and referred to the Reference Committee on Hygiene and Public Health:

WHEREAS, The health of the nation is a measure of its effectiveness both in peace and in war; and

WHEREAS, The military army of today was the civilian army of yesterday; and

WHEREAS, The necessity for protecting the public health was never more urgent; therefore be it

Resolved, By the House of Delegates of the American Medical Association, that the three Surgeon-Generals of the Army, the Navy and the U. S. Public Health Service, be memorialized as to the necessity for devising means for protecting the integrity of the health organizations of the several states.

Your committee approves this resolution and recommends its adoption by the House of Delegates.

Respectfully submitted by order of the Reference Committee.

J. W. Schereschewsky, Chairman.

A motion to adopt the report was made and seconded.

After discussion by Dr. John D. McClean, Pennsylvania; Dr. J. W. Schereschewsky, U. S. P. H. S.; Dr. S. W. Welch, Alabama, and Dr. Wilmer Krusen, Pennsylvania, it was moved that the resolution be laid on the table.

Seconded and carried.

Dr. Otto P. Geier, delegate from the Section on Preventive Medicine and Public Health, moved that the resolution

APPORTIONMENT OF DELEGATES

STATE	Membership of State Association, State Secretary's Report, April 1, 1918	Present Apportionment	Apportionment Based on One Delegate to Every 800 and Fraction	Increase	Decrease
Alabama	1,750	3	3	..	..
Arizona	170	1	1	..	..
[illegible]	1,014	2	2	..	..
[illegible]	2,255	4	3	..	1
[illegible]	873	2	2	..	..
[illegible]	1,017	2	2	..	..
[illegible]	113	1	1	..	..
[illegible]	558	1	1	..	..
Florida	560	1	1	..	..
Georgia	1,415	3	2	..	1
Idaho	132	1	1	..	..
Illinois	6,318	9	8	..	1
Indiana	2,055	4	3	..	1
Iowa	1,691	3	3	..	..
Kansas	1,603	2	3	1	..
Kentucky	2,261	4	3	..	1
Louisiana	813	1	2	1	..
Maine	744	1	1	..	..
[illegible]	1,014	2	2	..	..
[illegible]	3,665	5	5	..	..
[illegible]	2,734	4	4	..	..
[illegible]	1,352	2	2	..	..
[illegible]	400	2	1	..	1
Missouri	3,215	5	5	..	..
Montana	239	1	1	..	..
Nebraska	917	2	2	..	..
Nevada	88	1	1	..	..
New Hampshire	500	1	1	..	..
New Jersey	1,714	3	3	..	..
New Mexico	210	1	1	..	..
New York	8,468	11	11	..	..
North Carolina	1,300	2	2	..	..
North Dakota	430	1	1	..	..
Ohio	4,153	5	6	1	..
Oklahoma	1,466	2	2	..	..
Oregon	300	1	1	..	..
[illegible]	6,872	9	9	..	..
[illegible]	427	1	1	..	..
[illegible]	735	1	1	..	..
[illegible]	373	1	1	..	..
Tennessee	1,102	2	2	..	..
Texas	3,601	5	5	..	..
Utah	267	1	1	..	..
Vermont	254	1	1	..	..
Virginia	1,812	3	3	..	..
Washington	953	2	2	..	..
West Virginia	935	2	2	..	..
[illegible]	1,885	3	3	..	..
[illegible]	90	1	1	..	..
[illegible]	79	1	1	..	..
[illegible]	97	1	1	..	..
[illegible]	114	1	1	..	..
Porto Rico	112	1	1	..	..
Government Services	.....	3	3	..	..
Sections	.....	15	15	..	..
Total	.....	150	147	..	..

presented by the Reference Committee on Hygiene and Public Health, just tabled, be taken off the table.

Seconded and carried.

The resolution was again discussed by Drs. S. W. Welch, Otto P. Geier and John D. McClean, when Dr. Geier moved to amend the resolution by adding to the second part of it the words "maintaining the efficiency and financial support," so that the resolution as amended would read as follows:

> *Resolved*, By the House of Delegates of the American Medical Association, that the three Surgeon-Generals of the Army, the Navy and the United States Public Health Service be memorialized as to the necessity for devising means for protecting the integrity and maintaining the efficiency and financial support of the health organizations of the several states.

Seconded.

After further discussion by Drs. John D. McClean, Pennsylvania, and Dr. Otto P. Geier, the original motion as amended was put and carried.

Dr. E. H. Cary, Texas, moved that a vote of thanks be extended to the resident members and officers of the American Medical Association, and particularly to the Chicago Medical Society, for their hospitality and entertainment of the members of the House of Delegates. Further, that the thanks of the House of Delegates be extended to the ladies of Chicago and citizens for helping to make this meeting so pleasant and enjoyable. Seconded and carried.

Dr. E. Elliot Harris, New York: We all feel a great debt to the Speaker of the House of Delegates for the able manner in which he has conducted the deliberations of this House, and, therefore, I move that a rising vote of thanks be extended to him for his work during this session.

Seconded and unanimously carried.

The members of the House of Delegates, in accordance with the motion made by Dr. Goodwin, then arose and in silence bowed their heads for a few moments in respect to the memory of Dr. E. J. McKnight, late member of the Board of Trustees and of those Fellows and members who have "carried on" in the services of the nation, after which the Speaker declared the House of Delegates adjourned *sine die.*

REGISTRATION AT CHICAGO

The total registration at the Chicago Session was 5,553. Below are given two summaries, one by sections and one by states:

REGISTRATION BY SECTIONS

Practice of Medicine	1,880
Surgery, General and Abdominal	1,417
Obstetrics, Gynecology and Abdominal Surgery	345
Ophthalmology	417
Laryngology, Otology and Rhinology	291
Diseases of Children	222
Pharmacology and Therapeutics	30
Pathology and Physiology	76
Stomatology	29
Nervous and Mental Diseases	157
Dermatology	89
Preventive Medicine and Public Health	152
Genito-Urinary Diseases	119
Orthopedic Surgery	102
Gastro-Enterology and Proctology	71
Registrations without specifying any one section	156
Total	5,553

REGISTRATION BY STATES

	Number
Alabama	17
Arizona	3
Arkansas	40
California	83
Colorado	62
Connecticut	10
District of Columbia	36
Florida	9
Georgia	24
Idaho	14
Illinois	2,265
Indiana	307
Iowa	369
Kansas	125
Kentucky	69
Louisiana	19
Maine	2
Maryland	26
Massachusetts	42
Michigan	245
Minnesota	151
Mississippi	10
Missouri	180
Montana	19
Nebraska	90
Nevada	3
New Hampshire	4
New Jersey	15
New Mexico	7
New York	144
North Carolina	8
North Dakota	20
Ohio	333
Oklahoma	53
Oregon	12
Pennsylvania	164
Rhode Island	8
South Carolina	11
South Dakota	25
Tennessee	60
Texas	62
Utah	10
Vermont	6
Virginia	24
Washington	17
West Virginia	28
Wisconsin	307
Wyoming	15
Total	5,553

AWARDS IN THE SCIENTIFIC EXHIBIT

The Committee on Awards in the Scientific Exhibit made the following awards:

Gold Medal.—The Fort Riley Sanitary Laboratory, Fort Riley, Kan., fifty models of Army sanitary apparatus.

Silver Medal.—Mayo Foundation, Rochester, Minn., exhibit of the work of the Mayo Clinic and Research Laboratory.

Silver Medal.—Dr. David J. Davis, Chicago, investigations of sporotrichosis, including specimens, cultures and pictures.

Certificates of Merit:

United States Department of Agriculture, Bureau of Animal Industry.—Specimens of disease in food animals.

Dr. Henry F. Smyth, Laboratory of Hygiene, University of Pennsylvania.—Industrial dust—charts, photographs and museum specimens.

Dr. Alfred A. Strauss, Chicago.—Stomach and intestinal surgery—operation for sterility in male.

Dr. Leigh F. Watson, Chicago.—Experimental studies of goiter, specimens, photographs and photomicrographs.

Dr. Daniel N. Eisendrath, Chicago.—1. Experimental effects of cholecystectomy. 2. Anatomy of *common* duct region. 3. Specimens of kidney surgery.

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SATURDAY, JUNE 22, 1918

THE FOOD OF THE WORKER IN WAR TIME

In The Journal[1] last week, some facts were presented regarding the nutrition of the Army and the rationing of this selected group now comprising far more than a million of our population. Every one admits that it is of supreme importance to secure the highest physiologic well-being of these persons, on whom depends, in so large a measure, the success of our cause in the international crisis. Scarcely less desirable, however, is the preservation of adequate working strength and efficiency in the great group of laborers who, in one field or another, are producing the supplies without which armed forces cannot be maintained in action. Ships and munitions are among the indispensable requisites in the prosecution of the war. Those engaged in the manufacture of such requisites represent persons at hard work. Their dietary needs are therefore a matter of national concern.

Ordinarily the problems here raised would seem of minor significance so far as an adequate income will permit the purchase of the essentials for proper living. But with a world shortage in food, with a constant, yet surely justified demand on our own citizens to save food to the point of self-sacrifice, and with restrictions both economic and legal placed on the ready purchase of certain food commodities, it may well be asked whether a danger of impairment of the unorganized forces of our great army of labor is imminent. Here the experience of our allies may be of service to us; so that, as has often been reiterated in the course of the past year or two, we ought to profit by the knowledge of the failures or successes of the nations across the sea.

An unusually valuable report on the composition of dietaries, with special reference to those of munition workers, has just been published by the National Health Insurance Medical Research Committee[2] in Great Britain. The investigation was conducted by Viscount Dunluce and Capt. M. Greenwood of the Welfare and Health Section, Ministry of Munitions. The organization of the committee, which includes Christopher Addison, A. K. Chalmers, W. Bulloch, F. G. Hopkins, G. R. Murray, Sir W. M. Fletcher and Sir William Leishman as its medical and scientific members, is a guarantee of the presumable value of this inquiry. The committee points out that it usually happens in the progress of scientific knowledge that periods of great activity in the collection of new facts alternate with others of discussion and consolidation. The coming of war caught the study of nutrition in a period of the former kind. The sudden and exceptional demand for practical guidance which sprang from war conditions found many gaps in the body of knowledge actually available for practical use in dietetics. When the food shortage became imminent, physiologists were able in some degree to state in quantitative terms the actual energy consumed in this or that kind of productive work. They were not able, however, to estimate at all fully the adaptability of the human machine. Its demands and its possibilities had been laboriously studied under conditions which circumstances had led us to consider as normal; but exactly how far the machine is capable of being adjusted to other and, presumably, less favorable conditions was less well known.

For the purposes of comparison under the established conditions of environment and dietary habits existing in Great Britain, statistics of working-class diets, collected before the war, are available. They show a steady increase of energy intake with increasing income. The ranges are from 3,000 to 4,000 calories on a man-per-day basis; for these dietaries the protein consumption ranged from under 85 to about 115 gm. In general accord with these figures are further data collected with great care by Miss Ferguson[3] and her collaborators on the diets of forty Glasgow families in 1911-1912 and 1915-1916. The outcome is not widely different from the estimations of the United States Department of Agriculture's Division of Home Economics on the dietaries of American farmers, their rating being placed at about 3,500 calories per man per day and including 100 gm. of protein.

The British compilers admit that it is very difficult to draw general conclusions from such averages. Thus the budgets give no information regarding the use of alcoholic drinks, and although these beverages are not primarily drunk because of their food value, they must be allowed to contribute to the calorific properties of a diet containing them. Still, it does not appear that the prewar statistics demonstrate any necessity for the average working man to consume a diet equivalent to more than 3,500 calories.

Turning to war time conditions, we find available an unusually large series of statistics collected during the spring and summer of 1917 in English hostels and canteens serving the munition workers in various factories. These show the use of 3,463 calories, on the man-per-day basis, as an average of a larger number of dietaries probably than has ever been compiled for a working class population. About 14 per cent. of the calories were furnished by protein, that is, 116 gm. per day. The statistics are, of course, by no means uniform. Only in three hostels out of twenty-two investigated did the energy value of the daily diet sink below 3,000 calories.

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[1] The Food of the Army, editorial, The Journal A. M. A., June 15, 1918, p. 1864.

[2] National Health Insurance Medical Research Committee, Special Report Series, 1918, No. 13.

[3] Ferguson: Proc. Roy. Soc. Edinburgh, 1917, 37, Part 2, p. 117.

As is now well known, there was a season of acute shortage of potatoes in England last year, and coincidently there was an energetic campaign urging the public to "eat less bread." In addition, sugar was very scarce. As a phenomenon of nutrition among the people, it is interesting to learn, from actual dietary statistics, what was the effect of this pronounced tendency to decrease the intake of carbohydrates in the ration. The contrecoup of this economy, as the British report has expressed it, has been a remarkable increase in the consumption of fat and an appreciable rise in that of protein. The need of energy in some form cannot be thwarted. The consumption of fats was almost doubled, while that of the carbohydrates proportionately declined. The British committee is inclined to question the wisdom of such enforced changes. "Physiologically," it states, "we hold that the departure from a normal diet was undesirable because there are reasons why carbohydrates should bear the brunt of the struggle to provide energy for work." Hence it urged a radical modification of the dietaries then current (1917) in the direction of reducing fat and increasing the carbohydrate utilized. Perhaps it is fortunate that in this country, despite the urgent request to "eat no wheat," emphasis has always been placed by the United States Food Administration, thanks to its scientific advisers, on the substitution of other cereals so as to leave the essential make-up of the dietary unchanged.

A RETROSPECT OF THE CHICAGO SESSION

The sixty-ninth annual session of the American Medical Association, held in Chicago last week, was one of the most important the Association has ever held. This statement is made as the meetings, the exhibits, the addresses and the results of the past week pass in retrospect before us. The House of Delegates considered many topics of current war interest and passed a number of resolutions of important, timely character, conspicuous among them being those on animal experimentation, on universal military training, on welfare work among children, on the use of enemy manufactured pharmaceutic products, and on the work of Surgeon-General Gorgas.

The opening meeting of the Scientific Assembly, held in the Auditorium Theater was greeted by an audience of over 4,500 persons, every seat and available space in the theater being occupied. Unfortunately, many who desired to attend were unable to find accommodations because of late arrival. The music for this session was provided by the Fort Riley Band, which was a conspicuous feature of the annual session, and aided in arousing military enthusiasm. At this meeting, as in all of the night meetings, the medical officers in uniform were seated on the stage, and added military tone and color to the picture.

The scientific programs began on Wednesday and contained numerous papers of military interest, as well as those of a strictly scientific character.

An unusual feature of the session was the replacing of the President's reception by a medical war meeting held in Medinah Temple, the report of which appears elsewhere in this issue. The local committee on arrangements had done notable work in staging this meeting. Every seat in the immense auditorium was filled, over 6,000 persons being present. The speakers were the noted foreign guests, the Surgeon-Generals, the president of Leland Stanford University and Major Alexander Lambert of the American National Red Cross. The enthusiasm of the audience cannot be depicted by words, every speaker and patriotic enunciation being greeted with an ovation. With the introduction of each foreign guest the audience, led by a local choral organization and accompanied by the music of an immense pipe organ and the Fort Riley Band, sang a national song.

On Thursday, practically all of the scientific sections combined in two meetings of the greatest importance to the Army, the profession and the public. These meetings were held in the Auditorium and Studebaker theaters, and concerned the reconstruction and rehabilitation of disabled soldiers and the physical examinations made under the selective service. When the meeting in the Auditorium Theater opened, some 4,000 persons listened attentively to the message brought to them by representatives of the Surgeon-General's Office, of the Red Cross and of foreign nations as to the program for the care of the disabled fighting men in order that they may be returned to a useful civilian life. In the meeting on the selective service, Lieut.-Col. J. S. Easby Smith and Major Hubert Work of the Provost Marshal-General's Office were able to confer with the state aides of the governors of the various states who had been ordered to Chicago for this meeting, and to inform the many physicians representing the 23,000 physicians who are engaged in the work of the local, district appeal, and advisory boards under the selective service law, concerning many points which had not up to this time been made clear to them.

The Thursday night session was again a public, patriotic meeting. The Auditorium was again filled to capacity, the music on this occasion being provided by a detachment of the Great Lakes Naval Training Station Band and by group singing of the audience.

The scientific and commercial exhibits, the former being referred to elsewhere, were open throughout the session and were noteworthy for their practical and military features. The commercial exhibit included practically all of the recently developed foods, pharmaceuticals and mechanical devices resulting from necessities created by the advance of scientific knowledge and the military emergency.

Special arrangements were made for entertaining the medical women who attended the session in large numbers and also for the amusement of women guests. The entertainments included receptions, teas, a musicale, and a visit to the Great Lakes Naval Training Station to attend the dedication of the new Red Cross building. Arrangements had also been made for a visit to the central department Red Cross headquarters and to local merchandise and industrial plants.

To add to the entertainment of the visitors to this session, a medical motion picture show was conducted throughout the session, numerous reels of film lent by the Medical Department of the United States Army being continuously exhibited, including the famous film "Fit to Fight," prepared by the commission on training camp activities. Capt. H. M. Strong, post surgeon at Rantoul, Ill., was permitted to visit the annual session in an aeroplane, and arrived promptly on time in Chicago, being greeted by the Fort Riley Band and by many convention visitors.

The meeting also served to inform many physicians who are about to enter the military service concerning the routine of application and appointment, equipment, assignment to duty, etc. Medical military headquarters were in continuous operation, in charge of medical officers on active duty. Over 600 physicians were given information, supplied with application blanks, and many of them sent directly to the local examiner for physical examination.

The attendance at this session was the largest since the Chicago session of 1908. The total, 5,553, is but a meager 800 less than that of the 1908 session, and when one takes into consideration the fact that about 20,000 physicians are in active military service, that the services of many physicians are continuously needed by civilian communities and industrial institutions, and that railroad rates are comparatively higher than they have ever before been in the history of our country, the attendance at this session may well be said to have been phenomenal. No meeting of the Association has so successfully reached the public as did this sixty-ninth annual session, and the public showed its interest in the session and in the work which the medical profession is trying to accomplish, by attending in large numbers every meeting in which arrangements had been made for it. The local committee on arrangements and the medical profession of Chicago are to be congratulated on the results of this session, and the thanks and appreciation of every Fellow of the American Medical Association is due them.

THE EARLY HISTORY OF BACTERIOLOGY IN THE UNITED STATES

Whenever we are charged, as a nation, with being occupied solely with the life of trade, and the designation of Yankee is used to designate preeminently commercial habits, it is refreshing to turn to the history of science for the truth. Of course, in the earlier days of the United States as a national enterprise the conditions were scarcely favorable for the widespread prosecution of those studies for which the European peoples of the civilized world had been prepared by generations and even centuries of experience. America's intellectual life can at best be measured by decades. How has she progressed in some of the more recently recognized intellectual disciplines? The new science of bacteriology, the outcome of the labors of Pasteur, Lister, Koch and others, was born within the memory of many that are still living. The bacillus of tuberculosis was announced in 1882; the vibrio of Asiatic cholera in 1883; the bacilli of lockjaw and of diphtheria in 1884, the same year that marked the better recognition of the typhoid bacillus, which was really discovered in 1879; in 1894 came the discovery of the bacillus of bubonic plague; and along with this period belongs the finding of the micro-organisms of malaria, sleeping sickness, and several other diseases. In the midst of such developments the newer science of parasitology has found a firmer footing and a novel significance.

We are prone to look abroad for all considerations of guidance in these modern fields. Professor Bergey[1] of the University of Pennsylvania has lately pointed out how early were some of the efforts in this country to present the story of the bacteria. First in the list of early teachers he places the late Prof. T. J. Burrill of the University of Illinois, who introduced the study of the bacteria into his course on the fungi during the seventies. He discovered the organism of pear blight in 1879 and, in the following years, conducted extensive inoculation experiments with this organism on a large orchard of young pear trees, thereby definitely establishing the etiologic relation of the organism of the disease. In 1882, Dr. Burrill published a pamphlet entitled "Bacteria," in which he gives a discussion of the morphology, functions, classification and methods of study — the latter being those of the French school. The classification of the bacteria follows that of Ferdinand Cohn. There is also included a brief description of the bacteria that were then identified.

The late Surgeon-General Sternberg, to whose initiative we owe the appointment of the commission that discovered the mode of transmission of yellow fever by mosquitoes, translated Magnin's work on bacteria in 1880 and published his large manual of bacteriology in 1892. In the Bureau of Animal Industry at Washington, D. C., Salmon began to study the relation of bacteria to animal diseases as early as 1879; and the discovery of the protozoan organism responsible for Texas cattle fever, a classic research which brought prominence to Prof. Theobald Smith, was probably in a sense an outcome of these early endeavors. Before the nineties of the last century, bacteriology was taught systematically in a number of American educational institutions, the enumeration of which would recall many of the prominent investigators of today. Physicians, particularly those of maturer years, are wont to think of bacteriology solely as a branch of pathology or of medicine. The inspection of our scientific institutions shows how inadequate such an assumption is. As Bergey points out, courses in elementary bacteriology are now being given not only to general science students, but also to students in domestic science, agriculture, dairying, water and sewage purification, public hygiene and sanitation, medicine, dentistry, veterinary medicine, pharmacy, the brewing and fermentation industries, food production and preservation, and plant pathology.

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[1] Bergey, D. H.: Early Instructors in Bacteriology in the United States, Jour. Bacteriol., 1917, 2, 595.

THE PATHOLOGY OF "MUSTARD GAS"

Modern gas warfare dates from April, 1915, when the Germans first liberated the abominable cloud of gaseous chlorin on unsuspecting allied forces at the western front. Since then this heinous mode of attack has experienced numerous variations, which have been discussed in The Journal.[1] Meanwhile, methods of defense and protection have also been devised, one succeeding another as rapidly as inefficacy or inferiority was discovered. The respirator has become part of the outfit of the modern soldier in the trenches.

"The use of a gas shell to force a man to put on his mask," says Major Auld, the gas expert of the British Military Mission, in speaking of tear gas shells, "is practically neutralization. If at the same time you can hurt him, so much the better. Hence the change in gas-shell tactics, which consists in replacing the purely lacrimatory substance by one that is also poisonous." Accordingly the Germans developed a plan of gas warfare that not only harasses the enemy but also seriously injures him. Scarcely a year has elapsed since the so-called mustard gas, dichlorethylsulphid, was added to the fighting armamentarium in this capacity. The substance was first made in 1886 by a German chemist, Victor Meyer, who soon recognized its harmful character.

Subsequently the poisonous nature of this compound seems to have attracted little attention in the scientific world until it became one of the weapons of an army. Consequently the knowledge of its toxicology and the pathology of its manifestations has been limited. It should be recalled that the "mustard gas" is in reality a heavy oily fluid sinking below water and not miscible with it, of neutral reaction, having a faint, sweetish, ethereal odor only slightly suggestive of the sulphur compounds, and with a boiling point of 217 C. It thus has properties whereby it can be distributed in the form of a spray on impact of a shell.

From such reports as have been distributed, it appears that the conspicuous symptoms are conjunctivitis, laryngitis, bronchitis and skin burns, all due to the excoriating effect of the substance. The possibility of such complications as pulmonary edema and bronchopneumonia is apparent. Peculiar is the fact that the recognition of the symptoms is usually delayed for a considerable period, sometimes as long as sixteen hours. We are indebted to Warthin and Weller[2] of the Department of Pathology at the University of Michigan for an illuminating study of the skin lesions produced by dichlorethylsulphid. These show that it is an escharotic, specific in its action on the epidermis and tissues of the corium, particularly on the endothelium of the vessels. The lesion is a chemical burn unlike that produced by heat, electricity or the ordinary corrosives, such as sulphuric, nitric and hydrochloric acids, or strong alkalis. Of all these agents, the effects are most closely allied to those of hydrochloric acid, but are much greater in intensity. It differs from a heat burn in the absence of thrombosis, in the greater degree of fluid exudation, in the greater moistness of the affected area, and in the fact that the necrosis as shown by the loss of nuclei requires hours, or even days, for its complete development. The coagulated, shrunken and cooked appearance of the tissues in heat burns is not apparent in the tissues of mustard gas burns. The vessels in the affected area are severely damaged and collapsed, and there is a local anemia in the earlier stages, with a marked fluid exudation and leukocyte migration. The process is nonhemorrhagic and nonthrombosing. In man the necrosis of the epidermis is usually evident in two hours through the hydropic change in the epithelium and early vesicle formation. There is no deep edema. It is confined to the epidermis and to the papillary layer in the early stages.

Numerous observers have pointed out the slow and insidious development of the real damage done by the substance. Warthin and Weller state that the deep penetration of the smallest quantities applied to the surface is a most striking feature. There is an undoubted entrance through the hair follicles and the sebaceous and sweat glands. The slowly progressive character of the necrosis is a specific characteristic, the height of the necrosis being reached from five to ten days after application. This may in part be explained by contraction and death of the vessels, with resulting anemia in the affected area. The painlessness of the lesion is also a marked characteristic.

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[1] The Effects of Inhalation of Chlorin Gas, editorial, The Journal A. M. A., Nov. 27, 1915, p. 1921; Gases in Modern Warfare, April 20, 1918, p. 1160.

[2] Warthin, A. S., and Weller, C. V.: The Pathology of the Skin Lesions Produced by Mustard Gas (Dichlorethylsulphide), Jour. Lab. and Clin. Med. 1918, 3, 447.

This may be explained by the edema and degeneration of the nerve endings in the affected portion. The lesions recall a roentgen-ray burn of the skin in that healing is slow, owing probably to the injury of the blood vessels.

Current Comment

THE SCIENTIFIC EXHIBIT

The constant throng of interested visitors to the scientific exhibit throughout the annual session last week bore testimony to its value. The exhibit which attracted most interest was that from the Fort Riley Sanitary Laboratory, consisting of more than fifty models of apparatus constructed in the laboratory. Among these were seven original models designed by Major C. S. Williamson, M. R. C., director of the laboratory. His multiple shelf incinerator is inexpensive to build, simple to operate, and after the initial charge of fuel (a very small quantity) will burn garbage or garbage and feces indefinitely with no further fuel whatever. This exhibit served to emphasize the value of a research laboratory devoted to the sanitary problems of the Army and Navy, and many visitors expressed the hope that such a laboratory with proper equipment would be made a permanent institution in the government service. Other exhibits dealt with sanitary problems in civil life, such as the beautiful charts on malaria by the Prudential Insurance Company of America and the striking exhibit of industrial dust from the Laboratory of Hygiene of the University of Pennsylvania. These served to emphasize the fact that sanitary problems are attracting much attention, and that research work in these lines is yielding valuable information which can be put to practical use with great advantage. Exhibits showing interesting points in surgical technic by Drs. D. N. Eisendrath, Victor D. Lespinasse and Alfred A. Strauss were interesting and stimulating, while those bearing on problems associated with infectious diseases and immunity by Drs. Hideyo Noguchi, E. C. Rosenow and the Mayo Foundation, and Drs. D. J. Davis, Josiah Moore, Leigh Watson and others were of high grade. Admiration was expressed for the magnificent specimens of animal pathology as related to man, prepared by Dr. L. Enos Day of the U. S. Bureau of Animal Industry. The fine collection of historic medical books, letters and similar material exhibited by Dr. Mortimer Frank was a source of pleasure to a great many. The exhibits of the Propaganda Department and of the Chemical Laboratory of the American Medical Association afforded an insight into the practical and expansive work conducted through these activities. Of special interest at this time were the moving pictures showing the methods of graphic instruction used in camps and naval stations. One of the new U. S. motor ambulances was examined with much interest. The success of the exhibit seemed to suggest the direction to be taken by subsequent displays. The absence of extensive collections of pathologic specimens, and the prominence of sanitary subjects was striking. If the scientific exhibit is to be of real educational value it must consist of things graphically emphasizing facts that have a direct interest to those who see them, and it must not consist too largely of technical subjects which interest only a few individuals. Few exhibits attract the attention they deserve or exert their full educational value unless a competent demonstrator is constantly present, and visitors are always especially interested in meeting the person whose work is shown.

ANOTHER CHALLENGE TO THE ANTIVIVISECTIONISTS

The death rate in swine from all diseases for the year ending March, 1918, announced by the United States Department of Agriculture as 42.1 per 1,000, is the lowest in thirty-five years, according to the records kept during that period. The reduction in mortality, in the light of the statistics just published,[1] for previous years shows a sparing of 4,000,000 hogs, equivalent to the consumption of pork and pork products by the entire population of the United States for 1917 for nearly half a month. The marked reduction in the losses of swine for 1918 over preceding periods, in view of the fact that 90 per cent. of these losses are due to hog cholera, indicates clearly the benefit from the combined efforts of state and federal agencies in protecting the farmers against the ravages of this exceedingly fatal disease. Inasmuch as the antivivisectionists are continually decrying the use of protective serums and vaccines with the assertion that they are useless and inhuman, we wonder what new figment of their imagination will be presented to explain away the results so beneficent to our animal neighbors. Or shall we be told bluntly that the government figures are a lie? Perhaps the antivivisectionist loves his pork too well to deny them.

THE PRESIDENT-ELECT, MAJOR ALEXANDER LAMBERT

The president-elect of the American Medical Association, Major Alexander Lambert, M. R. C., U. S. Army, is already en route again to France to resume his duties as medical director for the Red Cross. Major Lambert is a member of a noted medical family. His father, Dr. Edward W. Lambert, an executive of ability, was for forty-five years chief medical adviser of the Equitable Life Assurance Society. This executive ability Major Lambert seems to have inherited to a remarkable degree, as indicated by his achievements. Dr. Lambert was born, Dec. 15, 1861, and received his A.B. from Yale in 1884, his Ph.D. in 1885, and his M.D. degree from the College of Physicians and Surgeons of Columbia University in 1888. After two years' service as an intern in Bellevue Hospital he entered on the active practice of his profession. He became attending physician at Bellevue Hospital in 1894, served as assistant bacteriologist in the New York Health Department from 1894 to 1901, and since 1898 has been professor of clinical medicine in the

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[1] See weekly News Letter published by the United States Department of Agriculture, Washington, May 29, 1918.

Cornell University Medical College. He has been attending and consulting physician in several New York hospitals, and is recognized especially for his work in circulatory diseases and in the treatment of drug and alcohol addictions. In the American Medical Association he has served in the House of Delegates as a representative of the great state of New York, became a member of the judicial council in 1911, and has been chairman of that body since 1912. As chairman of this council he worked in cooperation with a committee of the Council on Health and Public Instruction in the compilation of much material and in the issuing of notable reports on workmen's compensation and health insurance. In 1917 he became president of the Medical Society of the State of New York. Since 1907 he has been a member of the Medical Reserve Corps of the United States Army; a brief month after the United States entered the war he was ordered to active duty in France as deputy commissioner of war relief of the Red Cross and chief medical adviser of all American Red Cross activities in France and Belgium. His election to the presidency of the American Medical Association is but another recognition of services well rendered with an adequate conception of the duties of a physician to himself, to the public, to the state and to the nation. It does not mark, we are sure, the culmination of an already noteworthy career; it is but the placing of an earnest worker in a position in which he can render still greater service to worthy activities.

ENLISTMENT IN THE MEDICAL RESERVE CORPS

Since the publication in The Journal, June 1, of the survey of the medical profession's war service and the repetition of the call of the Surgeon-General for 5,000 additional medical reserve officers before Jan. 1, 1919, there has been a display of renewed active interest by the medical profession in military service. It cannot be called a revival, because at no time has the interest of the medical profession lapsed. Judging from the large number of inquiries now being received, however, interest is at fever pitch. Hundreds of letters and even telegrams have been received by The Journal asking for information, for application blanks, in fact, asking The Journal to make the decision as to whether or not it was the duty of the individual inquirer to enter the service. In order successfully to inform physicians, The Journal has grouped in a small booklet, "Information Regarding Appointment in the Medical Reserve Corps of the United States Army," a number of short, practical paragraphs relative to method of application, the equipment of officers, government insurance, the customs of the service, and work in the training camps. Copies of this booklet will be sent to physicians on receipt of a stamped addressed envelop. The American Medical Association and The Journal stand willing and ready to do everything possible to aid physicians in their desire to enter the service of our government in any capacity. Inquiries will be cheerfully answered in as reasonable a time as is consistent with the securing of accurate information.

Medical Mobilization and the War

Personnel of the Medical Department

For the week ending June 14, 1918, the personnel of the Medical Department of the Army included:

Medical Corps: 877, including 1 major-general, 65 colonels, 110 lieutenant-colonels, 298 majors and 403 lieutenants.

Medical Reserve Corps: 19,477, including 1,410 majors, 5,245 captains and 12,822 lieutenants. On active duty: 17,763, including 1,345 majors, 4,979 captains and 11,439 lieutenants.

Medical Corps, National Guard: 1,198, including 20 lieutenant-colonels, 255 majors, 188 captains and 735 lieutenants.

Medical Corps, National Army: 284, including 6 brigadier-generals, 56 colonels, 213 lieutenant-colonels and 9 majors.

The Discharges to date are:

	Number	
Causes	M.R.C.	M.C.N.G.
Physical disability	686	53
Inaptitude	263	21
Other branches of service	567	72
Resignations	162	33
Domestic troubles	59	0
Needed by community	50	0
Deaths	84	6
Dismissals	11	3
Duty completed	1	0
No reasons given	14	0
	1,897	188

Red Cross Needs Medical Men Abroad

The American Red Cross needs physicians and surgeons for its work abroad. The Medical Reserve Corps of the Army takes precedence over all other calls but there must be men who, rejected for slight physical disability or for being between 55 and 60 years of age, should be available for the various medical duties of the Red Cross. The teaching staff of the medical schools will not be taken unless with the written permission of the dean. Medical men are wanted for clinical work in medicine and surgery, for administration work, for hospital administration, and for the medical work in the manifold Red Cross activities. All who can go as volunteers, paying all their expenses, should do so to aid the Red Cross; but if this is impossible, the Red Cross is prepared to pay their expenses and, when necessary, to add the salary of a first lieutenant—$160 a month. It will be possible to have men go for work in the Red Cross for eight or nine months abroad and six months home, and again eight months abroad, thus having a rotating service as regards personnel, but a continuous medical service. All applications should be made to Dr. Alfred E. Shepley, Medical Personnel Bureau, Red Cross, Washington, D. C.

Alexander Lambert.

Chief Medical Adviser, Red Cross in France.
4 Place de la Concorde, Paris.

Army School of Nursing to Be Established

In order to provide adequately for the sick and wounded of a future possible army of unlimited size, the Surgeon-General of the Army has been authorized to establish an Army School of Nursing with branch training schools in various selected military hospitals throughout the country. The admission qualifications for young women desiring to attend this school are: age, between 21 and 35, a high school education or its equivalent, and physical and moral fitness. A course leading to a diploma in nursing will be given, should the military hospitals continue for the full period of the usual nursing course; should these hospitals be discontinued, on the cessation of hostilities before the completion of the course, a certificate will be issued which will entitle the holder to credit in a civil hospital for the period spent in the military hospital and for those branches in nursing successfully completed. Thus this Army School of Nursing will provide sufficient nursing service for the military hospitals and, while giving an opportunity to thousands of patriotic women who wish to serve their country in this capacity, it will give training very valuable to the candidates whether or not they take up nursing as a profession. Until otherwise specified, applications may be sent directly to the Army School of Nursing, Office of the Surgeon-General of the Army, Washington, D. C.

Leave of Absence for Medical Officers

Officers of the higher grades in the Medical Department, who have been serving continuously for six months at their desks on department business, will be required to take at least a two weeks' vacation, according to a memorandum which, it is reported, has been sent to the Surgeon-General of the Army by Secretary Baker. The memorandum states that this is necessary in order to retain the high efficiency of the Medical Department.

Camp Upton Base Hospital Issues New Publication

The first issue of a publication entitled *The Cure*, "published in the interests of the base hospital rather often" with the "largest high grade hospital circulation in Camp Upton, N. Y.," has just appeared. It is a four page news issue edited by the enlisted personnel of the Medical Department. The value of such publications in sustaining the interest of the men in the work and in upholding that elusive but most desirable quality, known as morale, can hardly be overestimated.

Special Duty for Enlisted Chemists

As the military service is in great need of chemists, the War Department has notified Army commanders that all enlisted men who are graduate chemists must be assigned to duty where their training can be most fully utilized. Therefore commissioned officers have been directed to ascertain the number of graduate chemists now on duty in their commands and to report their names to the Adjutant-General's Office at Washington, D. C., stating in their report special qualifications for any particular branch of chemical work and whether these chemists are now employed on chemical duties. Chemists now in military service in the United States have been ordered transferred to the nearest depot brigade; those now in depot brigades, or hereafter received by them will be assigned to service by the Adjutant-General's Office. Graduate chemists will be sent overseas only on chemical duties, and will be transferred to the nearest detachment or organization of their corps prior to departure.

MEMORANDUM FOR THE SURGEON-GENERAL OF THE UNITED STATES ARMY*

At a meeting of representatives of well recognized medical schools in Chicago, June 11, 1918, called by the Surgeon-General of the Army, the following Advisory Committee on Medical Schools was chosen to act as representative of the medical schools in cooperation with the Medical Department of the Army: Ray Lyman Wilbur, president of Leland Stanford University, *chairman*; Dr. William J. Means, president of the Association of American Medical Colleges; Dr. Samuel W. Lambert, dean of Columbia University College of Physicians and Surgeons; Dr. J. Whitridge Williams, dean of Johns Hopkins University Medical Department; Dr. Theodore Hough, dean of the University of Virginia Department of Medicine; Dr. John M. Baldy, president of the Pennsylvania Bureau of Medical Education and Licensure, and Dr. N. P. Colwell, secretary of the Council on Medical Education of the American Medical Association, *secretary*.

June 12, this committee met in conference with the Standing Committee on Medical Education of the Medical Department, consisting of Col. F. F. Russell, Col. V. C. Vaughan, Lieut.-Col. W. H. Welch and Lieut.-Col. H. D. Arnold.

It was voted that Dr. W. A. Pearson of Philadelphia and Dr. John K. Scudder of Cincinnati be added to the Advisory Committee on Medical Schools as representatives, respectively, of the American Institute of Homeopathy and the National Eclectic Medical Association.

The following recommendations were unanimously adopted:

It is recommended that only such medical schools as are amply equipped with teachers, laboratory facilities and clinical material be permitted to enter at this time on a plan of continuous sessions.

It is recommended that the Surgeon-General approve of summer sessions for senior students in such well recognized medical schools as, in his opinion, can furnish the instruction without lowering educational standards.

We approve of the following recommendations in the memorandum from the Surgeon-General to well recognized medical schools, dated May 24, 1918:

OTHER PROVISIONS FOR STUDENTS DURING THE SUMMER OF 1918

Provision should be made for all students who have conditions—either entrance conditions or those incurred in the medical course—to remove these conditions before the opening of the fall session. The plan of continuous sessions leaves little opportunity for making up conditions, and students who are left on inactive status must make normal progress with their class.

Please notify your students of the wishes of the Surgeon-General in this matter.

Students with remediable physical defects should be urged to have these removed during the coming summer. The desirability of thus saving time, and of securing a more complete recovery before active service, is obvious.

Students who must earn money in order to continue their medical education may be allowed to do this during the summer of 1918.

Students who are not provided for by the foregoing arrangements should devote the vacation period to clinical or laboratory work which would better fit them for the duties of medical officers. Schools which cannot organize complete courses for all classes in the school can render valuable service by organizing special courses for some of these students.

It is not practicable for the Medical Department to organize summer military training this year for medical students on an extensive scale.

By these arrangements every medical student on inactive status in the Medical Enlisted Reserve Corps may utilize the summer in active preparation for better service as a medical officer. It is believed that no patriotic enlisted man will be satisfied to take a long vacation when his drafted relatives and friends are in active military service.

FRESHMAN CLASS

Those medical schools which have heretofore held regular summer sessions will, of course, be permitted to continue the admission of students to the freshman class at this time. Schools which adopt the continuous session plan to begin this summer may organize a freshman class to begin the course between June 1 and July 1, 1918.

Well recognized medical schools are authorized to begin matriculation of the freshman class of 1918-1919 at once, whether the next session begins this summer or in the fall. A bona fide matriculation will be accepted as establishing membership in the class, as affecting eligibility for enlistment in the Medical Enlisted Reserve Corps.

ENTRANCE REQUIREMENTS

Permission to enlist in the Medical Enlisted Reserve Corps must now be obtained from the Surgeon-General's Office for each individual case.

Such permission will be granted in the case of medical students, who matriculate in the freshman class of the regular medical course, only when the dean's affidavit shows that matriculation has been based on acceptable credentials which meet the following entrance requirements:

The full completion of fourteen units of secondary education, and, in addition, studies of collegiate grade as follows:

1. In those schools which are members of the Association of American Medical Colleges, at least sixty semester hours of college premedical work in a well recognized university, college, or medical school, including at least twenty-four semester hours in chemistry, biology and physics. Credit for at least ten of these twenty-four hours must be for laboratory work, and there shall be credit for at least six semester hours in each of the three sciences of chemistry, biology and physics.

2. In those schools which now require at least two years of college work for entrance, the same requirements, whether members of the Association of American Medical Colleges or not.

3. In those schools which are not members of the Association of American Medical Colleges, and have not heretofore required two years of college work for entrance and have not announced a two year entrance requirement for the session of 1918-1919, at least thirty semester hours of college work of which at least eight semester hours are in chemistry, eight in biologic sciences, and six in physics; and of these at least four semester hours shall be for laboratory work in Chemistry, at least four in biologic sciences, and at least two in physics. All these specifications must be fully met without any conditions and all must be collegiate work.

LIMITATIONS OF NUMBERS

While it is desirable to train as many medical students as possible, and all good schools should be encouraged to accept students to the limit of their capacity, it is also essential that enlisted medical students should obtain an adequate professional training in preparation for the duties of medical officers.

Unless they can obtain such satisfactory training, the Surgeon-General will not be justified to leave them on inactive status. Therefore the number of students admitted to the freshman class should be limited to a number agreed on after conference with the Surgeon-General's Office.

Preference in matriculation should be given to candidates who are already members of the Medical Enlisted Reserve Corps.

Preference next should be given to those who appear to be eligible to become medical officers on graduation. The question of physical fitness should receive consideration. The following facts in regard to nationality affect the problem: A person must be a full citizen in order to receive a commission, and will not be granted a commission if born in an enemy country, whether a citizen or not. Approval for enlistment, therefore, will not be given to those born in enemy countries, nor to other foreign born students unless they have taken out first naturalization papers.

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* Published by request of Surgeon-General Gorgas.

The admission of students who are not eligible for a commission in the Army is not forbidden; but attention is called to the importance of first providing places for *all* who are eligible for military service.

It is recommended that when and where feasible the Surgeon-General shall arrange for active military service for medical students during the summer vacations, with the object of shortening the time for completing their training as medical officers.

It is recommended that the Surgeon-General consider as "well recognized medical schools" only those which enforce as a minimum requirement for admission, two years of college work, including courses in physics, chemistry and biology.

It is recommended that the teaching forces of the schools, as well as the students, be included in the Student Army Training Corps, and that the teachers of all subjects who are otherwise eligible shall be commissioned with suitable rank in that corps.

It is recommended that eligible members of the faculties of well recognized medical schools be commissioned with suitable rank in said corps, and that a sufficient number of these officers be assigned to duty in medical schools with periods of service long enough to provide for the efficient teaching of the medical students. Where feasible, it is desired that such officers alternate in active duty between service with the troops and teaching in medical schools.

It is further recommended that all students who are members of the Medical Enlisted Reserve Corps and the commissioned members of the faculty be required to wear uniforms. It is recommended also that similar provision be made for commissions and uniforms for nonmedical members of the faculties of well recognized medical schools.

Major departments in a medical school cannot be considered as adequately organized unless at least one competent man be retained in addition to the head of the department who can assume his duties.

It is recommended that teachers of medical schools inform themselves of the special application of their subjects to problems of war, and, so far as practicable, include such topics and application in their courses of instruction, always bearing in mind that they are training men for service in the Army; and also consider the feasibility of an interchange between different schools of teachers possessed of this knowledge.

The committee calls special attention to the importance of continuing research work in our medical schools and of providing sufficient personnel for this purpose.

It is recommended that the machinery for carrying out these recommendations be in the office of the Surgeon-General in conference with the dean or other anthorized representatives of the medical schools.

The committee voted to present the same recommendations to the Surgeon-General of the Navy, with the suggestion of the desirability of the adoption of the same measures as far as possible.

F. F. Russell, Colonel M. C., N. A.,
Chairman of the Standing Committee on Medical Education of the Medical Department of the United States Army.

Ray Lyman Wilbur,
Chairman, Advisory Committee on Medical Schools.

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ended June 7, 1918

1. ANNUAL ADMISSION RATE PER 1,000 (disease only):		Last Week
All Troops	1056.1	974.5
Divisional Camps	1135.3	757.8
Cantonments	975.6	1098
Departmental and Other Troops	1101.1	979.4
2. NONEFFECTIVE RATE PER 1,000 ON DAY OF REPORT:		
All Troops	37.8	36.8
Divisional Camps	36.8	31.7
Cantonments	42.2	43.1
Departmental and Other Troops	33.6	32.7
3. ANNUAL DEATH RATE PER 1,000 (disease only):		
All Troops	3.16	4.01
Divisional Camps	3.2	2.5
Cantonments	3.6	6.
Departmental and Other Troops	2.58	2.7

NEW CASES OF SPECIAL DISEASES DURING THE WEEK ENDING JUNE 7, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal		Measles	Meningitis	Scarlet Fever	Deaths	Annual Admission Rate per 1,000 (Disease Only)	Noneffective per 1,000
				Total	New Infections						
Beauregard	4	5	22	129	4	2	2	..	2	927.3	47.0
Bowie	4	..	2	52	51	2	..	..	1	764.1	25.3
Cody	11	..	..	3	3	...	..	1	3	967.8	24.5
Doniphan	...	..	..	15	...	3	..	1	2	1,479.5	44.0
Fremont	8	..	2	14	7	6	..	1	4	1,016.9	38.6
Hancock	...	..	..	74	...	1	..	..	0	985.8	43.5
Kearny	4	..	1	4	...	4	1	1	3	370.7	20.0
Logan	2	..	..	41	...	...	..	..	2	3,198.0	15.0
MacArthur	...	..	..	...	...	3	..	..	0	1,032.0	37.2
McClellan	2	..	4	26	10	3	..	..	0	782.2	25.0
Sevier	10	..	7	269	4	7	..	..	0	1,316.3	46.5
Shelby	...	..	8	15	3	2	..	1	0	1,007.3	39.2
Sheridan	...	..	1	55	...	6	..	..	0	613.6	25.0
Wadsworth	2	..	1	94	...	18	..	..	3	1,257.0	29.9
Wheeler	4	..	..	25	5	...	..	..	6	2,816.2	50.9
Custer	4	..	1	63	9	11	..	..	2	509.3	20.5
Devens	16	..	1	32	7	10	3	..	6	682.2	36.4
Dix	3	1	1	170	2	8	1	6	2	871.3	34.3
Dodge	4	..	2	99	...	14	..	2	3	1,239.9	59.1
Funston	3	..	..	50	4	6	2	..	2	787.1	55.4
Gordon	14	..	2	149	5	34	2	..	7	1,591.5	87.6
Grant	1	..	..	31	...	8	2	..	2	373.9	17.0
Jackson	9	..	1	114	...	58	..	..	1	1,412.7	57.7
J. E. Johnston	2	..	..	74	64	6	..	2	0	1,198.9	41.6
Lee	9	..	5	272	...	...	6	..	4	626.6	57.5
Lewis	4	..	3	235	3	3	3	9	5	1,007.9	33.1
Meade	3	..	..	18	4	2	1	..	1	559.7	29.4
Pike	14	4	15	72	12	44	2	..	5	1,681.2	60.7
Sherman	2	..	1	74	...	4	..	1	0	1,331.8	85.5
Taylor	7	..	..	102	...	16	..	..	0	1,017.4	42.9
Travis	1	..	6	69	6	26	1	1	2	1,366.1	39.3
Upton	8	..	1	293	34	...	1	1	5	740.7	27.2
Northeastern Dept.	2	..	..	27	14	3	..	..	1	735.5	28.5
Eastern Dept.	11	..	4	148	46	8	1	1	3	900.5	23.3
Southeastern Dept.	...	..	3	236	18	5	..	..	2	1,614.0	43.3
Central Dept.	2	..	..	78	37	5	..	2	1	1,591.5	42.2
Southern Dept.	8	2	1	337	90	13	..	9	6	1,172.5	31.4
Western Dept.	5	..	..	69	28	15	..	6	2	916.9	23.0
Aviation, S. C.	16	7	4	205	...	14	..	3	14	1,075.7	20.8
Alcatraz, D. B.	...	..	..	...	...	...	..	..	0	800.0	12.3
Columbus Bks.	...	..	..	22	1	...	..	..	1	570.0	18.7
Edgewood Arsenal	...	..	..	1	1	...	..	..	1	779.0	20.0
Hoboken	5	..	7	225	19	37	4	..	3	802.9	29.5
Jefferson Bks.	3	..	..	177	2	4	..	3	1	1,598.6	77.5
Leavenworth, D. B.	...	..	..	6	...	1	..	..	0	895.4	38.3
Fort Logan	...	..	..	10	...	...	..	1	2	1,691.5	50.3
Fort McDowell	2	1	..	45	...	3	..	1	0	3,824.5	101.0
Newport News	10	..	4	378	12	11	2	1	3	1,462.4	61.6
Fort Slocum	2	..	..	160	2	...	..	..	1	2,058.7	47.0
Springfield Arm.	...	..	..	...	...	...	..	..	0	......	....
Fort Thomas	1	..	1	17	...	4	..	..	0	985.0	29.0
Watervleit	...	..	..	...	...	...	..	..	0	600.0	25.9
West Point	...	..	..	1	...	...	..	..	0	785.4	13.8
Total	222	20	111	4,806	507	425	34	54	114	1,056.1	37.8

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending June 7, 1918	Departmental and Other Troops, Week Ending June 7, 1918	Divisional Camps, Week Ending June 7, 1918	Cantonments, Week Ending June 7, 1918	Expeditionary Forces, Week Ending May 30, 1918
Pneumonia	8.07	6.7	8.5	9.1	15 0
Dysentery	0.7	1.0	0.8	0.5	0 43
Malaria	4.0	2.38	8.0	3.4	0.95
Venereal	174.9	208.0	153.4	167.5	38 3
Paratyphoid	0.0	0.0	0.0	0.0	0.0
Typhoid	0.14	0.0	0.3	0.17	0 08
Measles	15.46	12.2	9.5	21.4	8.6
..	1.23	0.69	0.5	2.1	2.5
	1.96	2.68	0.8	1.9	7.2

COMMISSIONS ACCEPTED

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J. A. FULTON, Kansas City
G. M. GAFFORD, Kinsley
G. A. LANDES, Parsons

KENTUCKY

H. A. LICHTWARDT, Berea
T. D. RUDD, Hopkinsville
C. K. B [illegible]
J. K. F [illegible]
C. R. F [illegible]
E. J. EVERSOLE, New Castle

LOUISIANA

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A. S. COOPER, Mansfield
V. H. FUCHS, New Orleans
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W. G. THOMPSON, Holden
J. T. ANDERSON, Kansas City
D. H. BOKHOF, Kansas City
J. R. CRAWFORD, Kansas City
F. M. DENSLOW, Kansas City
F. B. KYGER, Kansas City
H. S. THOMAS, Kansas City
N. ZOGLIN, Kansas City
G. KAEMMERLING, Joplin
R. H. MORRIS, Linneus
J. MADDOX, Moberly
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R. A. YOUNG, Auburn
G. F. POPE, Winnemucca

NEVADA

C. H. CHURCH, Tonopah

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W. A. ALLEN, Hampstead

NEW JERSEY

A. REINGOLD, Hoboken
R. N. ABELS, Jersey City
S. BARISHOW, Jersey City
T. J. RIORDAN, Jersey City
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W. C. MEAGHER, Mont Clair
G. E. GALLOWAY, Rahway

NEW MEXICO

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D. S. DOOMAN, New York
W. M. FORD, New York City
S. D. GIFFEN, New York City
A. LEIBOVITZ, New York City
W. C. MacDONALD, New York
H. S. MARCLEY, New York
D. A. McAULIFFE, New York
F. G. SCHAIBLE, New York
W. W. TRACEY, New York
A. WEINBERG, New York
N. G. ORCHARD, Rochester
W. W. WOGLOM, Ruyter
H. GAK, S. Onondaga

NORTH CAROLINA

R. M. LANCASTER, Dobson
W. MANN, New Bern
C. E. WOODING, Winston-Salem

NORTH DAKOTA

E. C. STUCKE, Garrison

OHIO

J. E. TALBOTT, Alger
A. E. KISER, Cincinnati
M. L. PETERSON, Cincinnati
E. C. MYLITT, Cleveland
D. V. ROSENBERG, Cleveland
W. A. ORT, Springfield
M. C. HOUSTON, Urbana
W. D. DAVIS, Wellston

OKLAHOMA

C. J. BRUNSON, Adamson
A. E. HALE, Alva
O. FRANKLIN, Broken Arrow
W. A. AITKEN, Enid
H. S. DRUMMOND, Haileyville
H. E. BREES, Henryetta
A. F. HOBBS, Hinton
V. H. BARTON, McAlester
C. C. SHAW, McAlester
W. C. WAIT, McAlester
J. H. WHITE, Muskogee
R. D. LOWTHER, Norman
H. REED, Oklahoma City
B. F. NEWLON, Ponca City
H. B. JUSTICE, Sapulpa
G. L. McCALLUM, Sapulpa
W. B. NEWLON, Tulsa
V. M. GOREE, Taloga
G. A. WALL, Tulsa

OREGON

C. T. HOCKETT, Enterprise
R. W. STEARNS, Medford
J. W. McCOLLOM, Portland

PENNSYLVANIA

C. O. PETERS, Albion
L. L. BROWN, Castle Shannon
G. H. CROSS, Chester
J. W. WOOD, Chester
J. V. BURNS, Coaldale
M. U. STONEMAN, Crafton
W. G. TURNBULL, Cresson
D. R. MORGAN, Edwardsville
A. B. HAMILTON, Freeland
G. W. SMELTZ, Markleton
D. C. LINDLEY, New Castle
G. FETTEROLF, Philadelphia
F. FRALEY, Philadelphia
G. W. A. HESS, Philadelphia
S. D. INGHAM, Philadelphia
M. H. JOSEPH, Philadelphia
H. H. LOTT, Philadelphia
F. O. WAAGE, Philadelphia
E. C. NIEBAUM, Pittsburgh
R. J. FORD, Pittsburgh
H. L. W. WIGNALL, Pittsburgh
C. B. LAMP, Seminole
A. C. LAMADE, Williamsport
A. H. CAVEN, Youngwood

RHODE ISLAND

R. P. CAPWELL, Providence
W. G. DWINELL, Providence
W. A. RISK, Providence

SOUTH DAKOTA

A. G. ALLEN, Deadwood

TENNESSEE

P. W. EMERSON, Chattanooga
E. T. WEST, Johnson City
S. C. ANDREWS, Memphis
J. A. SANDERS, Nashville
B. E. DELOZIER, Townsend
J. B. CROSS, Wheat

TEXAS

W. D. BROWN, Beaumont
J. GRIMES, Beaumont
W. F. THOMPSON, Beaumont
O. N. MAYO, Belton
J. W. MACUNE, Davilla
F. W. FRANCIS, Fort Worth
S. H. MOORE, Houston
E. C. MURRAY, Houston
P. SCARDINO, Houston
H. LAFARGE, Kingsbury
W. THOMAS, Mabank
W. S. HANSON, San Antonio
L. S. JOHNSTON, San Antonio
W. B. URMSTON, San Antonio
D. M. STONE, San Antonio
F. C. WALSH, San Antonio

UTAH

R. KANZLER, Ogden
J. U. GIESY, Salt Lake City

VERMONT

H. F. TAYLOR, Hardwick
H. H. HANRAHAN, Rutland

VIRGINIA

P. E. TUCKER, Buckingham
H. WALL, Claremont
H. C. BRADFORD, Norfolk
J. L. STRINGFELLOW, Norfolk
H. M. GROVE, Richmond
A. P. JONES, Roanoke

WASHINGTON

C. G. RAHAL, Ronald
C. D. HUNTER, Tacoma

WEST VIRGINIA

E. W. SMOOT, Clendenin
C. S. FLEMING, Fairmont
C. M. VAUGHAN, Farmington
R. L. DEVEREUX, Wheeling
J. W. GILMORE, Wheeling

WISCONSIN

J. SUTHERLAND, Brodhead
R. B. QUINN, Darlington
A. T. JOHNSON, Sauk City
C. C. DAVIN, Weyerhauser

CORRECTION

The order published May 4, 1918, stating that Lieut. R. P. JOHNSON, M. R. C., was honorably discharged was in error. Lieutenant Johnson writes that he is at this time on active duty in Camp Shelby, Miss.

ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

To Army Medical School for duty, from New York, Major FELIX R. HILL.

To Camp Crane, Allentown, Pa., for duty, from Fort Oglethorpe, Col. CLARENCE J. MANLY; from Camp Sherman, Lieut-Col. EDWARD G. HUBER.

To Camp Custer, Battle Creek, Mich., for temporary duty, from Camp Sherman, Lieut.-Col. SAMUEL S. CRIEGHTON. Base hospital, from Fort Riley, Lieut. MERRILL K. LINDSAY.

To Camp Devens, Ayer, Mass., Camp Dix, Wrightstown, N. J., and *Camp Meade*, Annapolis Junction, Md., base hospitals, and on completion *to his proper station*, from Camp Upton, Lieut.-Col. JAY D. WHITHAM. *To Camp Devens* for temporary duty, from Camp Wadsworth, Lieut.-Col. CONDON C. McCORMACK.

To Camp Dodge, Des Mines, Ia., as assistant to camp surgeon, from Vancouver Barracks, Lieut.-Col. EDWIN W. RICH; from Camp Meade, Major BERTRAM P. BUCKWALL.

To Camp Gordon, Atlanta Ga., base hospital, from Camp Sheridan, Col. DAVID BAKER; from Fort Oglethorpe, Lieut.-Col. CRAIG R. SNYDER.

To Camp Greene, Charlotte, N. C., *Camp Wadsworth*, Spartanburg, and *Camp Sevier*, Greenville, S. C., *Camp Gordon*, Atlanta, Ga., *Camp McClellan*, Anniston, Ala., *Camp Pike*, Little Rock, Ark., and *Fort Oglethorpe* for inspection, and on completion *to his proper station*, Lieut.-Col. GEORGE E. DE SCHWEINITZ.

To Camp Jackson, Columbia, S. C., base hospital, from Fort Oglethorpe, Major GEORGE H. McCLELLAN.

To Camp Lee, Petersburg, Va., *Camp Jackson*, Columbia, S. C., *Camp Hancock*, Augusta, and *Camp Wheeler*, Macon, Ga., *Camp Shelby*, Hattiesburg, Miss., *Camp Sheridan*, Montgomery, Ala., and *Camp Beauregard*, Alexandria, La., for inspection, and on completion *to his proper station*, Lieut-Col. HARRIS P. MOSHER. *To Camp Lee*, base hospital, from Camp Wadsworth, Major WILLIAM R. DEAR; from Fort Riley, Major JAMES A. WILSON.

To Camp Meade, Annapolis Junction, Md., for temporary duty, and on completion *to his proper station*, from Camp Wheeler, Lieut.-Col. GEORGE F. KEEMAN. Base hospital, from Fort Riley, Major ROBERT H. DUENNER.

To Camp Shelby, Hattiesburg, Miss., as assistant to camp surgeon, from Governors Island, Lieut.-Col. FREDERICK S. MACY. For inspection, and on completion *to his proper station*, from Camp Sheridan, Major CHARLES C. HILLMAN.

To Camp Sheridan, Montgomery, Ala., as commandiniz officer of base hospital, from Charleston, S. C., Col. LEIGH A. FULLER. *To Camp Sheridan*, Montgomery, Ala., *Camp Sevier*, Greenville, S. C., *Camp Greene*, Charlotte, N. C., *Camp Meade*, Annapolis Junction, Md., and *Camp Dix*, Wrightstown, N. J., for consultation, and on completion *to his proper station*, from Camp Kearny, Lieut.-Col. ALEXANDER MURRAY.

To Camp Sherman, Chillicothe, Ohio, *Camp Meade*, Annapolis Junction, Md., and Camp Dix, Wrightstown, N. J., base hospitals, and on completion *to his proper station*, from Camp Zachary Taylor, Lieut.-Col. WILL L. PYLES. *To Camp Sherman*, as assistant to camp surgeon, from Panama Dept., Major GEORGE C. BEACH, JR.

To Camp Zachary Taylor, Louisville, Ky., *Camp Dodge*, Des Moines, Ia., and *Camp Grant*, Rockford, Ill., for investigation, and on completion *to their proper stations*, Col. FREDERICK F. RUSSELL; Lieut.-Col. WILLIAM H. WELCH.

To Charleston, S. C., for duty, from Surgeon-General's Office, Col. HENRY P. BIRMINGHAM.

To Chicago, Ill., Northwestern University, for duty, and on completion *to their proper stations*, Col. THEODORE C. LYSTER; Lieut.-Col. DAVID SILVER.

[illegible] camp surgeon, from Camp Wadsworth, Major [illegible] L.

[illegible] *Wyo.*, for duty, from Fort Riley, Lieut. PAUL K. SAUER.

To Fort Leavenworth, Kansas, for duty, from Camp Lee, Lieut.-Col. FERDINAND SCHMITTER; from Rockeeller Institute, Major CYRUS B. WOOD.

To Fort Riley, as camp surgeon, from Camp Doniphan, Col. FRANK R. KEEFER.

To Hamilton, and Toronto, Ontario, Car [illegible] l on completion *to his proper station*, Lieut.-Col. [illegible]

To Hoboken, N. J., for duty, from Cam [illegible] EAL W. WOOD; from Camp Cody, Lieut.-Col. [illegible]

To Lakewood, N. J., and *Camp A. A. Humphreys*, Accotink, Va., for sanitary inspection, and on completion *to his proper station*, Lieut.-Col. FRANK W. WEED.

To New Haven, Conn., *Otisville*, and *Staten Island, N. Y.*, for inspection, and on completion *to his proper station*, Col. GEORGE E. BUSHNELL.

To New York City for duty, and on completion *to his proper station*, Lieut.-Col. JOHN A. HORNSBY.

To report to the Surgeon General of the Army for duty, from Hoboken, Col. ALFRED E. BRADLEY.

To San Francisco, Calif., for duty from Hawaiian Department, Lieut.-Col. HERBERT C. GIBNER, Major CHARLES M. WALSON; from Camp Wheeler, Lieut. BENJAMIN B. MATTON.

To Washington, D. C., for consultation, and on completion *to his proper station*, from Cape May, Col. LOUIS BRECHEMIN; from Colonia, Lieut.-Col. ALFRED P. UPSHUR; from Fort McHenry, Lieut.-Col. HARRY S. PURNELL; from Fort McPherson, Col. THOMAS S. BRATTON; from Fort Porter, Lieut.-Col. THOMAS F. WOODSON; from Hoboken, Lieut.-Col. HENRY H. RUTHERFORD; from Lakewood, Col. ALLEN M. SMITH; from Takoma Park, Col. WILLARD F. TRUBY. For duty, the Surgeon-General's Office, from Camp Devens, Lieut.-Col. LEARTUS J. OWEN; *from* Southern Department, Major EMERY B. NEFF.

The following order has been revoked: *To Fort Benjamin Harrison, Ind.*, for duty, from Fort Riley, Lieut. LEO P. BELL.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp A. A. Humphreys, Accotink, Va., to examine members of the command for tuberculosis, and on completion *to his proper station*, from Camp Meade, Lieut. BURTON F. AUSTIN, Chancellor.

To Camp Dick, Dallas, Tex., for duty, from Mineola, Capt. KOSCIUSKO W. CONSTANTINE, Roebuck Springs.

To Camp Forrest, Chickamauga Park, Ga., for duty, Lieut. HILLIE R. DYKES, Ariton.

To Camp Greene, Charlotte, N. C., for duty, from Fort Oglethorpe, Lieut. EUGENE P. COWGILL, Magnolia Springs.

To Camp MacArthur, Waco, Tex., for duty, Capt. JOHN McP. LOWREY, Birmingham.

To Fort MacArthur, Los Angeles, Calif., for duty, from Camp Hancock, Capt. MACK ROGERS, Birmingham.

To Fort Sill, Okla., for duty, Lieut. LEWIS E. SORRELL, Birmingham.

To Portland, Ore., Yeon Building, for duty, from Lake Charles, La., Lieut. TOLL H. SUDDUTH, Garden City.

Arizona

To San Francisco, Calif., for duty, Lieut. WILLIAM O. SWEEK, Phoenix.

Arkansas

To Hoboken, N. J., base hospital, from Army Medical School, Lieut. ARTHUR G. KEELEY, De Witt.

To Portland; Ore., Yeon Building, for duty, from Fairfield, Ohio, Lieut. R. NEWMAN BROWN, McGehee.

To report by wire to the commanding general, Southeastern Department, for assignment to duty, Capt. MARDELLE Y. POPE, Monticello; Lieuts. PASCHAL J. PARK, Cabot; JOHN W. BUSH, Hot Springs.

To Rockefeller Institute for instruction, in the treatment of infected wounds, and on completion to Fort McPherson, Ga., *for* duty, from Camp Shelby, Lieut. FRED S. WATSON, Amity.

California

To Anchorage, Alaska, for duty, from Portland, Ore., Capt. HUMPHREY P. PALMER, Vacaville.

To Camp Bowie, *Fort Worth*, Texas, base hospital, from Douglas, Ariz., Major HARRY C. LOOS, San Diego.

To Camp Fremont, Palo Alto, Calif., base hospital, from Camp Kearny, Major WALTER V. BREM, Los Angeles. For duty, from Camp Lewis, Lieut. GLENN E. MYERS, Agnew.

To Camp Kearny, Linda Vista, Calif., as a member of the tuberculosis examining board, Lieut. CHARLES A. SHEPARD, San Bernadino.

To Camp Lee, Petersburg, Va., for duty, from New York City, Lieut. L. J. SCHERMERHORN, Stockton.

To Camp Travis, Fort Sam Houston, Tex., for temporary duty, from Fort Riley, Lieut. JOSEPH J. KAVANAGH, San Francisco.

To Camp Wadsworth, Spartanburg, S. C., for temporary duty, from Fort Riley, Lieut. CHARLES A. WARNER, Ontario.

To Camp Wheeler, Macon, Ga., for temporary duty, from Fort Riley, Lieut. CHARLES S. YOUNG, Los Angeles.

To Fort Oglethorpe for instruction, from Fort Riley, Lieut. FRANK W. H. TAYLOR, San Diego.

To Fort Riley, hospital train, from Camp Fremont, Capt. JAMES H. PARKINSON, Sacramento.

To Hoboken, N. J., for duty, from Camp Sheridan, Capt. WILLIAM H. WICKETT, Fullerton.

To Princeton, N. J., for conference, and on completion *to Philadelphia*, from Philadelphia, Major FREDERICK P. GAY, Berkeley.

To report by wire to the commanding general, Western Department, for assignment to duty, Lieuts. FRED O. BUTLER, Eldridge; EDWARD A DIGGINS, ARCHIBALD A. NORTON, San Francisco.

To San Francisco, Calif., for instruction, and on completion *to Camp Cody*, Deming, N. M., base hospital, Capt. WALTER A. BAYLEY, Los Angeles.

To Vancouver Barracks, Wash., for duty, from San Francisco, Capt. FRED R. FAIRCHILD, Woodland.

To Waco, Texas, for duty, from Mineola, Lieut. FREDERICK C. LEWITT, San Francisco.

To Williamsbridge, N. Y., for temporary duty, from Camp Hancock, Capt. THOMAS R. PETCH, Eureka.

Canal Zone

To Army Medical School for instruction, Lieut. JAMES W. SHERRILL, Ancon

To Fort Oglethorpe for duty, from Walter Reed General Hospital, Major SURSE J. TAYLOR, Cristobal.

To report to the commanding general, Panama Canal Department, for duty, Lieut. JOHN C SCOTT, Ancon.

Colorado

To Camp Custer, Battle Creek, Mich., base hospital, Major JACOB C. EPLER, Pueblo.

To Fort Oglethorpe for instruction, from Fort Riley, Lieut. LOUIS G. BROWN, Colorado Springs.

To Hoboken, N. J., base hospital, from Camp Fremont, Lieut. FRANK DUNKLE, Denver.

To Portland, Ore., Yeon Building, for duty, from Camp Greene, Lieut. CHARLES O. BOOTH, Saleda.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School, for duty, Lieut. RUFFIN A. PAINE, Denver.

Connecticut

To Camp A. A Humphreys, Accotink, Va., as orthopedic surgeon from Fort Oglethorpe, Capt. ROBERT M. YERGASON, Hartford.

To Camp Gordon, Atlanta, Ga., for duty, Lieuts. BENJAMIN V. FINKELSTONE, Bridgeport; ISIDORE HENDEL, New London.

To Camp Jackson, Columbia, S. C., for duty, Lieut. HYMAN A. LEVIN, New Haven.

To Camp Meade, Annapolis Junction, Md., for duty, from Army Medical School, Capt. JOHN A. KEYTON, Norwich. *To Camp Meade*, *Camp Dix*, Wrightstown, N. J., and *Camp Upton, L. I., N. Y.*, for consultation and on completion *to his proper station*, from Camp Sherman, Major LOUIS Y. MASON, Willimantic.

To Edgewood, Md., base hospital, from Camp American University, Lieut. MICHAEL E. CLAFFEY, Naugatuck.

To Fort Oglethorpe for instruction, Lieuts. JOSEPH F. O'BRIEN, ARTHUR F. ROCHE, THEODORE LER. STOREY, Hartford.

To Hoboken, N. J., base hospital, Lieut. KARL R. BRETSFELDER, New Haven.

To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, Lieuts. HARTWELL G. THOMPSON, Hartford; JOSEPH D. RUSSO, New Haven.

To Newport News, Va., for duty, Lieut. HERBERT A. ROBERTS, Shelton.

Delaware

To Camp Custer, Battle Creek, Mich., base hospital, *from* Fort Oglethorpe, Lieut. ABRAM J. GROSS, Wilmington.

District of Columbia

To Army Medical School for instruction, Lieuts. IRL C. RIGGIN, MERRILL C. SOSMAN, JOHN B. WHITE, Washington.

To Camp Meade, Annapolis Junction, Md., *for duty*, from Army Medical School, Lieut. HARRY A. BISHOP, Washington.

To Fort McPherson, Ga., for duty, Lieut. FREDERICK M. NOLAN, Washington.

To Fort Oglethorpe for instruction, Lieut. WILLIAM C. MILLER, Takoma Park.

The following order has been revoked: *To Camp Jackson*, Columbia, S. C., for duty, Lieut. WILFRED M. BARTON, Washington.

Florida

To Camp Gordon, Atlanta, Ga., for duty, Lieut. SAMUEL ARONOVITZ, Jacksonville.

To Camp Lee, Petersburg, Va., as assistant to camp surgeon, from Fort Oglethorpe, Major GEORGE R. PLUMMER, Key West.

To Camp Sherman, Chillicothe, Ohio, for temporary duty, from Fort Oglethorpe, Lieut. HERBERT A. McCLURE, Greenwood.

To Fort Des Moines, Iowa, base hospital, from Washington, D. C., Capt. GEORGE B. COON, Tampa.

To Miami, Fla., Gunnery School, for duty, Lieut. WILLIAM A. MILLS, Miami.

To Portland, Ore., Yeon Building, for duty, from Arcadia, Capt. HENRY P. BEVIS, Arcadia.

Georgia

To Camp A. A. Humphreys, Accotink, Va., to examine members of the command for tuberculosis, and on completion *to his proper station*, from Camp Meade, Lieut. RALPH E. HAMILTON, Douglasville.

To Camp Bowie, Fort Worth, Texas, base hospital, from Army Medical School, Lieut. GALVIN W. DAVIS, Atlanta.

To Camp Greene, Charlotte, N. C., for duty, from Americus, Major WILLIAM A. JACKSON, Atlanta.

To Camp Jackson, Columbia, S. C., for duty, Lieuts. WILLIAM R. RICHARDS, Calhoun; CHARLES B. UPSHAW, Rydal.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Army Medical School, Lieut. JEFFERSON W. PAFFORD, Nicholls.

To Houston, Texas, Signal Corps Aviation School for duty, from Americus, Capt. JOHN McG. SPENCE, Camilla.

To New Haven, Conn., for duty, Lieut. ARCH ELKIN, Atlanta.

To report by wire to the commanding general, Southeastern Department, for assignment to duty, Lieut. CARSWELL J. HIND, JR., Atlanta.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School,* for duty, Lieut. EMMET B. ANDERSON, Atlanta.

Idaho

To Camp A. A. Humphreys, Accotink, Va., to examine members of the command for tuberculosis, and on completion *to his proper station,* from Camp Meade, Capt. CLYDE E. WATSON, Nampa.

To Fort Oglethorpe for instruction, from Fort Riley, Capt. JOSEPH ASPRAY, Moscow.

Illinois

To Army Medical School for instruction, from Camp Dodge, Lieut. CHARLES A. CIBELIUS, Chicago.

To Blacksburg, Va., Virginia Polytechnic Institute, to make physical examinations and give medical attention to the drafted men enrolled at this institution, and on completion *to his proper station,* from Camp Wadsworth, Lieut. JOHN V. DILLMAN, Louisville.

To Boston, New York City and *Philadelphia,* for duty, and on completion *to his proper station,* from Chicago, Major JOHN RIDLON, Chicago.

To Camp A. A. Humphreys, Accotink, Va., to examine the command for nervous and mental diseases, from Camp Travis, Capt. JAMES K. POLLOCK, Elgin. To examine members of the command for tuberculosis, and on completion *to his proper station,* from Camp Meade, Lieut. JOHN F. GRANT, Chicago.

To Camp Cody, Deming, N. M., base hospital, Capt. ST. ELMO M. SALA, Rock Island.

To Camp Crane, Allentown, Pa., base hospital, from Camp Grant, Lieut. HARRY W. KINNE, West Chicago.

To Camp Custer, Battle Creek, Mich., base hospital, Capt. JUNIUS C. HOAG, Chicago. For duty, Lieuts. HENRY A. HOUGH, Arrowsmith; ARTHUR B. SUPPLE, Chicago; JOHN J. HOPKINS, Hindsboro; GEORGE P. SANDROCK, Shannon.

To Camp Devens, Ayer, Mass., for duty, from Chicago, Lieut. CHARLES L. KERRICK, Chrisman.

To Camp Dix, Wrightstown, N. J., for duty, Capt. ROBERT A. SEMPILL, Chicago.

To Camp Dodge, Des Moines, Iowa, for temporary duty, from Fort Riley, Lieut. MELVIN L. HOLE, Danville.

To Camp Gordon, Atlanta, Ga., for duty, Capt. EDWIN L. WINSLOW, Danville; Lieut. FRANKLIN H. DORNBUSCH, Chicago; from Camp Meade, Capt. ROY R. FERGUSON, Chicago; from Camp Sherman, Lieut. HARVEY C. ASHER, Chicago; from Fort Oglethorpe, Lieut. CLARENCE W. FLINT, Chicago.

To Camp Hancock, Augusta, Ga., for duty, from Camp Shelby, Capt. CLAUSEN M. WILMOT, Speer.

To Camp Jackson, Columbia, S. C., base hospital, Lieut. LESTER C. WEST, Chicago. For duty, Lieuts. ANSEL O. MAGILL, Concord; ARNOLD F. MUELLER, Johnburg; EUGENE B. PERRY, Melvin.

To Camp Joseph E. Johnston, Jacksonville, Fla., as member of the tuberculosis examining board, from Williamsbridge, Capt. EDWIN S. GILLESPIE, Wenona.

To Camp Kelly, South San Antonio, Tex., for duty, from Mineola, Capt. EUGENE CARY, Chicago.

To Camp Lee, Petersburg, Va., base hospital, from Camp Meade, Lieut. EVERETT E. HOWARD, Rossville.

To Camp Sherman, Chillicothe, Ohio, base hospital, Lieut. HARRY N. CHAMBERLAIN. Chicago.

To Camp Wadsworth, Spartanburg, S. C., base hospital, from Fort Oglethorpe, Lieut. ORVAN A. PHIPPS, Toledo.

To Camp Wheeler, Macon, Ga., base hospital, from Chicago, Lieut. HERMAN C. KOCH, Chicago.

To Cape May, N. J., for duty, Major HERBERT A. POTTS, Chicago.

To Chicago, Ill., Northwestern University School of Medicine, for instruction, from Camp Gordon, Lieut. OTTO H. SCHOTT, Chicago.

To Douglas, Ariz., for duty, from Fort Riley, Capt. JOHN A. BORTZ, Nauvoo.

To Fort Bliss, Texas, for temporary duty, from Philadelphia, Lieut. FRANK J. JIRKA, Chicago.

To Fort McPherson, Ga., base hospital, from Fort Oglethorpe, Capt. William W. HOYT, Chicago. For duty, from Fort Riley, Lieut. HAROLD SWANBERG, Chicago.

To Fort Oglethorpe for instruction, Lieuts. VIRGIL D. GREER, Chicago; JAMES S. ANTLE, Utica.

To Fort Riley, as division psychiatrist, from Camp MacArthur, Capt. ROMMEY M. RITCHEY, Elgin.

To Hoboken, N. J., for duty, from Army Medical School, Capt. VICTOR M. DALY, Pontiac; from Camp Dodge, Lieut. CARL F. LEWIS, Jerseyville. Base hospital, Lieut. HARTLEY F. MARS, Chicago; from Camp Grant, Lieut. CHARLES E. WEST, Decatur; from Fort Oglethorpe, Lieut. LOUIS A. MANGAN, Chicago; from Fort Riley, Lieuts. SIDNEY B. CONGER, HENRY C. WERNICKE, Chicago.

To Markleton, Pa., for duty, from San Antonio, Capt. SAMUEL M. MARCUS, Chicago.

To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, from Fort Sill, Capt. DAVID R. SCOTT, Macomb.

To New York City, Hospital for Ruptured and Crippled, for instruction, from Philadelphia, Capt. PERCY P. HASLITT, Marshall.

To Portland, Ore., Yeon Building, for duty, from Memphis, Lieut. ROBERT B. MILLER, Rock Island.

To report to the commanding general, Philippine Department, for duty from Camp Custer, Lieut. ELMER O. DAHL, Chicago. *To report to the Governor of the Panama Canal* for duty, from Camp Zachary Taylor, Lieut. ALBERT F. RYAN, Chicago.

To Washington, D. C., for duty in the Surgeon-General's Office, from Fort Riley, Lieut. WILLIAM R. WHITLEY, Chicago.

To Waynesville, N. C., for duty, from Fort Riley, Capt. DANIEL W. YOUNG, Paris.

Honorably discharged, Capt. FRANK B. IRELAND, Washburn. On account of physical disability not incurred in the line of duty, Lieut. FRANKLIN B. PEARCE, Eldorado. On account of physical disability existing prior to entrance into the service, Lieut. LAWRENCE H. MARLEY, Nokomis.

Resignation of Lieut. CHRIS E. EMMERY, Chicago, accepted.

The following orders have been revoked: *To Camp Meigs,* Washington, D. C., for duty, from Camp Hancock, Lieut. CLINTON STALEY, Enfield. *To Camp Sheridan,* Montgomery, Ala., base hospital, from Fort Oglethorpe, Lieut. GEORGE E. ARZT, Chicago.

Indiana

To Army Medical School for instruction, and on completion *to Boston, Mass.,* Harvard Graduate School of Medicine, for further instruction, from San Antonio, Capt. WILLIAM C. MOSS, Bunker Hill.

To Camp Custer, Battle Creek, Mich., for duty, Lieut. ALBERT C. CLAUSER, Delphi.

To Camp Gordon, Atlanta, Ga., base hospital, from Army Medical School, Capt. MERTON A. FARLOW, Milroy.

To Camp Kearny, Linda Vista, Cal., as assistant to the camp surgeon, from Fort Riley, Lieut. ALFRED W. HADLEY, Jasonville.

To Camp Lee, Petersburg, Va., for duty, from Army Medical School, Lieut. PORTER W. HOPKINS, East Chicago.

To Camp Sevier, Greenville, S. C., for temporary duty, from Fort Oglethorpe, Lieut. WILLIAM C. MEYERS, Dava.

To Camp Zachary Taylor, Louisville, Ky., for duty, from Camp Zachary Taylor, Capt. HUBERT P. BUTTS, Pierceville.

To Fort McHenry, Md., for duty, from Camp Lee, Major ALFRED P. ROOPE, Columbus; from Fort Oglethorpe, Capt. JONES L. SAUNDERS, Newport.

To Fort Oglethorpe for instruction, Lieut. HAROLD J. PIERCE. Terre Haute.

To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, Lieut. EARL M. KOONS, Indianapolis.

To Otisville, N. Y., for duty, from Camp Wadsworth, Capt. BENONI S. ROSE, Evansville.

To report by wire to the commanding general, Western Department, for assignment to duty, from Camp Kearny, Capt. JOHN E. METCALF, Gary.

To Washington, D. C., for duty in the Surgeon-General's Office, from Fort Oglethorpe, Major HORACE R. ALLEN, Indianapolis,

Iowa

To Camp Greene, Charlotte, N. C., base hospital, from Army Medical School, Lieut. FRED W. NIEHAUS, McClelland.

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieuts. JOHN I. MARKER, Centerville; RALPH LOVELADY, Sidney.

To Fort Oglethorpe for instruction, Lieut. ISAAC H. ODELL, Des Moines.

To Mineola, L. I., N. Y., for temporary duty, and on completion *to his proper station,* Major EUGENE R. LEWIS, Dubuque.

To New Haven, Conn., for duty, from Camp Travis, Lieut. MILTON D. JEWELL, Decorah.

To Portland, Ore., Yeon Building, for duty, from Fort Omaha, Lieut. JOSEPH W. TYRRELL, Des Moines.

Resignation of Capt. LEO E. EVENS, Waterloo, accepted.

Kansas

To Camp Crane, Allentown, Pa., base hospital, from Camp Zachary Taylor, Lieut. GEORGE T. THACHER, Waterville.

To Camp Grant, Rockford, Ill., base hospital, from Fort Riley, Lieut. LEON MATASSARIN, Wichita.

To Kansas City, Mo., Sweeney Auto and the Rahe and Tractor Schools, to make physical examinations and give medical attention to the drafted men enrolled at these institutions, *Capt.* CLAY E. COBURN, Kansas City.

To Portland, Ore., Yeon Building, for duty, from Camp Greene, Lieuts. DAVID E. KISECKER, JOHN C. McKINNON, Caldwell.

The following order has been revoked: *To Army Medical School,* for instruction, Lieut. EARL C. LIGHTFOOT, Mineral.

Kentucky

To Camp A. A. Humphreys, Accotink, Va., as assistant to the camp surgeon, from Fort Riley, Lieut. ROBERT W. PORTER, Georgetown.

To Camp Custer, Battle Creek, Mich., base hospital, from Fort Oglethorpe, Capt. HERBERT B. BLAYDES, La Grange.

To Camp Hancock, Augusta, Ga., as assistant to the camp surgeon, from Camp Zachary Taylor, Capt. LEE J. ERNSTBERGER, Louisville.

To Camp Pike, Little Rock, Ark., for duty, from Camp Joseph E. Johnston, Lieut. SAMUEL E. STANLEY, Louisville.

To Camp Travis, Fort Sam Houston, Texas, for duty, Capt. JOE L. BARKER, Pembroke; Lieut. SAMUEL T. SCRIVNER, Millers Creek.

To Camp Zachary Taylor, Louisville, Ky., base hospital, Lieut. CHARLES K. BECK, Louisville.

To Charleston, S. C., as assistant to the camp surgeon, from Camp Grant, Capt. GARLAND W. HILL, Springfield.

To Fort Oglethorpe for instruction, Capt. SAMUEL J. BAKER, Madisonville.

To Hoboken, N. J., for duty, from New Haven, Capt. ERWIN C. BRANDON, Springfield.

To report to the Governor of the Panama Canal, for duty, from Camp Raritan, Capt. DELFRERS P. CURRY, Jr., Bowling Green, from Camp Pike, JAMES A. GRIDER, Smith's Grove.

The following orders have been revoked: *To Army Medical School,* for duty, from Rockefeller Institute, Lieut. FERDINAND H. HAESSLER, Louisville; *to Camp Dix,* Wrightstown, N. J., base hospital, from Camp Shelby, Capt. JOHN T. PRICE, Harrodsburg.

Louisiana

To Camp Devens, Ayer, Mass., for temporary duty, from Fort Oglethorpe, Capt. JOHN McKOWEN, Baton Rouge.

To Camp Forrest, Chickamauga Park, Ga., for duty, Lieut. GEORGE A. RAMSEY, Farmerville.

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieuts. LIONEL F. LORIO, Glynn; LUCIEN A. LEDOUX, New Orleans.

To Fort Adams, R. I., for duty, and on completion *to Army Medical School* for instruction, from Plattsburg Barracks, Lieut. ABRAHAM MATTES, New Orleans.

To Fort Oglethorpe for instruction, Lieut. REYNOLD C. VOSS New Orleans.

To Hoboken, N. J., base hospital, from Fort Riley, Major JAMES B. GUTHRIE, New Orleans. For duty, from Army Medical School, Capt. RALPH HOPKINS, New Orleans.

To Portland, Ore., Ye[illegible] from Lake Charles, La., Lieut. MICHEL F. MO[illegible]

Resignation of Lieut. [illegible], Jonesboro, accepted.

Maine

To Camp Crane, Allentown, Pa., base hospital, from Camp Devens, Lieut. HAROLD E. E. STEVENS, Lewiston.

To Camp Laurel, Laurel, Md., for duty, from Fort Oglethorpe, Lieut. DE FOREST WEEKS, Portland.

To Hoboken, N. J., for duty, from Camp Dix, Lieut. CARL D. GRAY, Portland.

To report by wire to the commanding general, Northeastern Department, for assignment to duty, Lieut. ALBERT L. STANWOOD, Andover.

Maryland

To Army Medical School for instruction, from Camp MacArthur, Lieut. GEORGE H. PRESTON, Baltimore.

To Camp Gorden, Atlanta, Ga., for duty, from Camp Lee, Lieut. WILLIAM R. GERAGHTY, Baltimore.

To Camp Sevier, Greenville, S. C., base hospital, Lieut. DAVIS N. RICHARDS, Germantown.

To Fort McHenry, Md., for observation and treatment, Capt. ALGERNON D. ATKINSON, Baltimore.

To Fort Sam Houston, Texas, Department Laboratory, for duty, from Army Medical School, Lieut. CHURCHILL F. WORRELL, Baltimore.

To Hoboken, N. J., base hospital, Lieut. JOHN R. DAVEE, Baltimore.

To New Haven, Conn., for duty, Lieut. SAMUEL SNYDER, State Tuberculosis Sanatorium.

To New York City, Neurological Institute, for instruction, Lieut. GEORGE L. LAVERTY, Roland Park.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to his proper station*, from Camp Meade, Lieut. CLAUDE C. KELLY, Baltimore.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School*, for duty, Lieut. LOUIS A. M. KRAUSE, Baltimore.

To Washington, D. C., for temporary duty in the Surgeon-General's Office, from Camp Dix, Lieut. NOLAN D. C. LEWIS, Crownsville.

Massachusetts

To Americus, Ga., Signal Corps Aviation School, for duty, from Wichita Falls, Lieut. WILLIAM F. MacKNIGHT, Fall River.

To Army Medical School for instruction, and on completion *to Boston, Mass.*, Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Lieuts. ELIE J. LALIBERTE, Fall River; HERBERT W. ELLAM, Gardner.

To Baltimore, Md., for instruction, from Camp Dodge, Capt. ANDREW W. SELLARS, Boston.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, Lieut. NORMAN W. GILLESPIE, Dorchester.

To Camp A. A. Humphreys, Accotink, Va., for temporary duty, from Fort Riley, Lieut. FRANK B. BERRY, Cambridge.

To Camp Devens, Ayer, Mass., for conference, and on completion *to Lakewood, N. J.*, for consultation, and on completion *to his proper station*, Major KENDALL EMERSON, Worcester.

To Camp Dix, Wrightstown, N. J., base hospital, from Camp Devens, Capt. WILLIAM K. S. THOMAS, Cambridge; from Camp Meade, Lieut. WARREN S. SHIELDS, Boston.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. NATHAN A. BOLOTOW, Boston; from Hoboken, Lieut. NICHOLAS A. GALLAGHER, Malden.

To Camp Hancock, Augusta [illegible] from Philadelphia, Lieut. FRANK W. [illegible] ase hospital, Lieut. Paul C. DENNETT, [illegible]. Capt. ALFRED [illegible] orne.

To [illegible] C., for duty, from Fort Oglethorpe, Capt. [illegible] Boston. Base hospital, from Rockefeller Institute, Lieut. JAMES H. PARK, Jr., Boston.

To Camp Lee, Petersburg, Va., for temporary duty, from Fort Oglethorpe, Lieut. RICHARD M. ASH, West Quincy.

To Camp MacArthur, Waco, Texas, as orthopedic surgeon, from Philadelphia, Lieut. ARTHUR L. BRUNELLE, New Bedford. With the board examining the command for nervous and mental diseases, from Camp Dodge, Lieut. WALTER A. JILLSON, Westborough.

To Camp Upton, L. I., N. Y., to examine the command for nervous and mental diseases, from Camp Dix, Major GEORGE E. McPHERSON, Medfield.

To Fort Adams, R. I., for duty, Capt. WINSOR H. TYLER, Lexington.

[illegible] instructor in military roentgenology, from Fort [illegible] GEORGE, Boston. For instruction, Lieut. [illegible] Boston. [illegible] duty, from Camp Jackson, Capts. BRONSON [illegible] DONALD MACOMBER, Newton.

To New Orleans, La., for duty, from Fort Oglethorpe, Capt. NATHANIEL K. NOYES, Duxbury.

To Richmond, Va., for duty, from Aberdeen, Md., Major ARTHUR H. CROSBIE, Boston.

To West Point, Miss., for duty, from Camp Greene, Lieut. ALFRED J. BONNEVILLE, Hatfield.

The following orders have been revoked: *To Camp Hancock*, Augusta, Ga., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. HARRY A. WALKER, Somerville. *To Camp Jackson*, Columbia, S. C., for duty, Lieut. FREDERICK A. MEADE, Williamsett.

Michigan

To Aberdeen, Md., for duty, from Edgewood, Capt. THOMAS B. HENRY, Northville.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Camp Devens, Lieut. HEROLD F. OHRT, Detroit.

To Camp Beauregard, Alexandria, La., for duty, Lieut. LYLE B. KINGERY, Ann Arbor.

To Camp Custer, Battle Creek, Mich., base hospital, Lieut. CLARK C. PIPER, Detroit. For duty, Lieuts. ARTHUR J. NUMANN, ARTHUR W. NEWITT, Detroit.

To Camp Dix, Wrightstown, N. H., as assistant to the camp surgeon, from Williamsbridge, Major WILLARD H. HUTCHINGS, Detroit.

To Camp Jackson, Columbia, S. C., for duty, Lieut. SPENCER DeW. GUY, Benton Harbor; from Camp Beauregard, Capt. JACK R. HOLASNY, Detroit.

To Camp MacArthur, Waco., Texas, with the board examining the command for nervous and mental diseases, from San Antonia, Lieut. NICHOLSON W. PINTO, Kalamazoo.

To Camp Meade, Annapolis Junction, Md., for duty, from Camp Jackson, Capt. HENRY J. MEYER, Saginaw.

To Fort Oglethorpe for instruction, from Camp Hancock, Lieut. LELAND H. TOWER, Battle Creek.

To Hoboken, N. J., base hospital, from Fort Oglethorpe, Lieut. THOMAS M. KANE, Jr., Lansing.

To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, Lieut. CARL N. LARSEN, Detroit.

To Pittsburgh, Pa., Carnegie Building, for instruction, and on completion *to his proper station*, from Camp Shelby, Capt. BURT F. GREEN, Hillsdale.

To Portland, Ore., Yeon Building, for duty, from Camp Greene, Lieut. NELSON McLAUGHLIN, Lake Odessa.

The following orders have been revoked: *To Fort Riley* for instruction, Capt. LOUIS BARTH, Grand Rapids. *To Pittsburgh, Pa.*, Carnegie Building, for instruction, and on completion *to his proper station*, from Camp Sherman, Lieut. WORTH W. WALTON, Mancelona.

Minnesota

To Camp Greene, Charlotte, N. C., base hospital, from Fort Riley, Lieut. JOSEPH C. MICHAEL, St. Paul.

To Camp Laurel, Laurel, Md., for duty from Camp Grant, Lieut. WILLIAM F. MAERTZ, New Prague.

To Camp Lee, Petersburg, Va., as orthopedic surgeon, from Chicago, Lieut. JOHN A. SAARI, Eveleth. As assistant to camp surgeon, from Fort Riley, Lieut. JAMES R. McVAY, Rochester.

To Camp Lewis, American Lake, Wash., base hospital, from Camp Shelby, Capt. THOMAS G. CLEMENT, Vernon Center.

To Camp Meade, Annapolis Junction, Md., for duty, from Army Medical School, Lieut. MILLARD F. SMITH, St. Paul.

To Camp Pike, Little Rock, Ark., as assistant to the camp surgeon, from Fort Riley, Lieut. JOSEPH MOSES, Jr., Northfield.

To Camp Sevier, Greenville, S. C., base hospital, Capt. BYRON A. KAMP, Albert Lea. As orthopedic surgeon, from Chicago, Lieut. CARL PAULSON, Minneapolis.

To Fort Oglethorpe for instruction, from Memphis, Lieut. GROVER C. BLACK, Minneapolis.

To Fort Riley, hospital train, from Pullman, Lieut. PETER C. BJORNSBY, Bagley.

To Mineola, L. I., N. Y., for duty, Lieut. PAUL B. GILLESPIE, Minneapolis.

To New Haven, Conn., for duty, from Fort Riley, Lieut. LEE W. POLLOCK, Rochester.

To report to the commanding general, Philippine Department, for duty, from Camp Kearny, Capt. RALPH J. SEWALL, Crosby.

To Rochester, Minn., Mayo Clinic, as instructor, from Washington, Major CHARLES H. MAYO, Rochester.

The following order has been revoked: *To Hoboken, N. J.*, for duty, from Fort Riley, Lieut. JOSEPH C. MICHAEL, St. Paul.

Mississippi

To Camp Lee, Petersburg, Va., base hospital, from Camp Meade, Lieut. LEONIDAS F. BARRIER, Greenwood.

To Hoboken, N. J., for duty, from Army Medical School, Lieut. THOMAS A. STRAIN, Meridian; JAMES H. SLAUGHTER, Plattsburg.

To Portland, Ore., Yeon Building, for duty, from Lake Charles, La., Lieut. BARTON J. FARR, Holcomb.

Missouri

To Army Medical School for instruction, from Camp MacArthur, Lieut. JOHN H. MURPHY, St. Louis; from Hoboken, Lieut. SIDNEY J. WOLFERMANN, St. Louis.

To Camp Crane, Allentown, Pa., for duty, from Cleveland, Lieut. EUGENE A. MILLER, St. Louis.

To Camp Gordon, Atlanta, Ga., for duty, from Fort Oglethorpe, Capt. CHARLES A. VOSBURGH, St. Louis.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Camp Fremont, Capt. OSCAR F. BAERENS, St. Louis.

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieuts. ARTHUR J. SMITH, Boonville; JESSE MADDOX, Moberly; FLORIEN VAUGHN, Shelbina.

To Camp Zachary Taylor, Louisville, Ky., base hospital, Lieut. PATRICK McGENNIS, St. Louis.

To Douglas, Ariz., for duty, from Camp Travis, Capt. JOSEPH C. HYNES, St. Louis.

To Fort Des Moines, Iowa, for temporary duty, from Fort Oglethorpe, Lieut. CHARLES F. DAVIS, Jr., Kansas City.

To Fort Oglethorpe for instruction, from Dallas, Lieut. CHARLES D. MENEFEE, Perry.

To Kansas City, Mo., Sweeney Auto School and the Rahe and Tractor School, to make physical examinations and give medical attention to the drafted men to be enrolled at these institutions, Lieut. WILLIAM G. THOMPSON, Holden.

To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, Capt. ANDREW W. McALESTER, Kansas City.

To New York City, Hospital for Ruptured and Crippled, for instruction, from Chicago, Capt. LUTHER O. NICKELL, Macon.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to Camp Wadsworth*, Spartanburg, S. C., base hospital from Rockefeller Institute, Capt. W. T. ELAM, St. Joseph.

To Portland, Ore., Yeon Building, for duty, from Lake Charles, La., Capt. NORVALL W. SHARPE, St. Louis; from Camp Dick, Lieut. ELIJAH A. COLLEY, St. Joseph; from Lonoke, Lieut. ALFRED L. WESSLING, Martinsville.

To report to the commanding general, Philippine Department, for duty, from Jefferson Barracks, Capt. MARC. R. HUGHES, St. Louis; from Fort Riley, Lieut. LEVI S. LONG, St. Joseph.

To Rockefeller Institute for instruction in laboratory work, and on completion *to St. Louis, Mo.*, Washington University, for duty, from Washington, D. C., Major EUGENE L. OPIE, St. Louis.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, from Camp Greene, Capt. CHARLES H. HECKER, St. Louis.

Montana

To Camp Gordon, Atlanta, Ga., for duty, Capt. ALOYSIUS N. J. DOLAN, Great Falls.

To Fort Ontario, N. Y., for temporary duty, from Fort Riley, Lieut. JULIO R. SOLTERO, Belgrade.

To Fort Riley for instruction, Lieut. CHARLES A. GARDNER, Columbus.

To San Francisco, Calif., for instruction, and on completion *to Camp Kearny*, Linda Vista, Calif., base hospital, Lieut. JOHN L. TREACY, Helena.

Nebraska

To Camp Dodge, Des Moines, Iowa, as orthopedic surgeon, from Fort Riley, Capt. HOMER DAVIS, Genoa.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Camp Grant, Capt. JOHN BUIS, Pender.

To Camp Travis, Fort Sam Houston, Texas, for duty, Capt. WILLIAM J. DOUGLAS, Atkinson; Lieut. LOUIS N. SMERNOFF, Omaha.

To Douglas, Ariz., for duty, from Fort Riley, Lieut. THOMAS LAHNERS, Belvidere.

To Fort D. A. Russell, Wyo., for duty, Lieut. OSCAR P. SCHNETAZY, Schuyler.

To Fort Des Moines, Iowa, base hospital, from Fort Riley, Major JOHN P. LORD, Omaha.

To Fort Slocum, N. Y., for duty, from Army Medical School, Lieut. GUY S. PHILBRICK, Omaha.

To Hoboken, N. J., base hospital, from Camp Shelby, Capt. JOHN C. MOORE, Omaha.

To Portland, Ore., Yeon Building, for duty, from Fairfield, Ohio, Lieut. FRANK W. SCOTT, Lodge Pole; *from Fort Omaha*, Lieut. WILLIAM E. MOGAN, Petersburg.

Honorably discharged, Capt. HARRY M. BONNIWELL, Lincoln.

Nevada

To Camp Crane, Allentown, Pa., base hospital, from Camp Shelby, Capt. WILLIAM J. CIRCE, Carson.

To Portland, Ore., Yeon Building, for duty, from Camp Greene, Lieut. DAVID W. BEDINGER, Ruth.

New Hampshire

To Boston, Mass., for orthopedic instruction, and on completion *to his proper station*, Major KENDALL EMERSON, Worcester.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. HILLARD C. CLARK, Bethlehem.

To Camp Pike, Little Rock, Ark., with the board examining the command for nervous and mental diseases, from Camp Meade, Capt. LEE C. STILLINGS, Alstead.

To Newport News, Va., for duty, Capt. WALTER A. ALLEN, Hamstead.

New Jersey

To Camp Crane, Allentown, Pa., base hospital, from Hampton, Lieut. HUGH S. CHIDESTER, Hoboken.

To Camp Dix, Wrightstown, N. J., for duty, Capt. HENRY COGAN, Paterson.

To Camp Jackson, Columbia, S. C., for duty, Lieut. EARLE R. DAVIS, Haddon Heights.

To Camp Meade, Annapolis Junction, Md., as orthopedic surgeon, from Fort Oglethorpe, Major HAROLD D. CORBUSIER, Plainfield.

To Camp Wadsworth, Spartanburg, S. C., base hospital, from Army Medical School, Lieut. LOUIS C. ROSENBERG, Newark.

To Hoboken, N. J., base hospital, Capt. HARRY C. REYNOLDS, Passaic; Lieut. JESSE R. PATTON, Long Branch.

To New Haven, Conn., for duty, Lieut. SAMUEL BARISHAW, Jersey City.

To Otisville, N. Y., for duty, *from Camp Dix*, Lieut. ALONZO W. LITTLE, Jersey City.

To report to the commanding general, Philippine Department, for duty, from Camp Custer, Lieut. IRWIN MARKOWITZ, Jersey City.

New Mexico

To Fort Oglethorpe for instruction, from Fort Riley, Lieut. NATHANIEL D. FRAZIN, Tyrone.

To Portland, Ore., Yeon Building, for duty, from Camp Greene, Lieut. ANTHONY E. LANKFORD, Dedman.

New York

To Army Medical School for instruction, from Camp Meade, Lieut. FREDERIC DAMRAU, Brooklyn. On completion *to Boston*, Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Lieut. LOUIS F. CRASSON, Brooklyn.

To Boston, Mass., for duty, Capt. JOSEPH RAPHAEL, Brooklyn.

To Buffalo, N. Y., and *Toronto, Can.*, for duty, and on completion *to his proper station*, Major RICHARD H. HUTCHINGS, Ogdensburg.

To Camp A. A. Humphreys, Accotink, Va., for duty, from Fort Oglethorpe, Lieuts. DAVID PASHMAN, New York; CHARLES RIEGER, Staten Island. To examine members of the command for tuberculosis, and on completion *to his proper station*, from Camp Meade, Lieut. ALEXANDER ALTSCHUL, New York.

To Camp Crane, Allentown, Pa., for duty, from Walter Reed General Hospital, Capt. SAMUEL STEWART, Syracuse; from Cleveland, Lieut. DONOLD E. BRACE, New York City. Base hospital, from Camp Lee, Lieut. ABRAHAM SHORR, Brooklyn.

To Camp Custer, Battle Creek, Mich., base hospital, Lieut. CHARLES W. DUNN, Jersey City.

To Camp Dix, Wrightsown, N. J., for duty, Capt. SAMUEL A. BUCHENHOLZ, New York. With the board examining the command for nervous and mental diseases, Capt. JOHN S. RICHARDS, Randall Island.

To Camp Gordan, Atlanta, Ga., for duty, Lieuts. RICHARD M. FIELD, MAX RESNICOFF, Brooklyn; CHARLES J. BARONE, JOSEPH J. ZIMMERMAN, Buffalo; WILLIAM A. MacPHERSON, LeRoy; WALDO B. FARNUM, New York; *DARRY H. PATRIE*, Red Hook from Camp Devens, Lieut. FRANK TANNEBAUM, New York; from Camp Grant, Lieut. *DANIEL B. LYNCH, New York*; from Fort McHenry, Lieut. RUSSELL C. PARSON, Brooklyn.

To Camp Greene, Charlotte, N. C., for duty, from Garden City, Major ATTILIO M. CACCINI, New York.

To Camp Hancock, Augusta, Ga., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. DANIEL J. SWAN, Flushing.

To Camp Jackson, Columbia, S. C., as a member of the tuberculosis examining board, from Camp A. A. Humphreys, Lieut. WILLIAM B. EBELING, Brooklyn. Base hospital, Capt. DENIS A. McAULIFFE, New York; from New York City, Lieut. FRANK G. WALZ, Buffalo. For duty, Lieuts. DAVID NEWMAN, Bronx; AARON ROTH, Brooklyn. With the board examining the command for *nervous and mental diseases*, Lieut. HOMER I. REXFORD, Willard; from Newport News, Lieut. HOWARD W. DAVIS, Poughkeepsie.

To Camp Lee, Petersburg, Va., as camp psychiatrist, from Camp A. A. Humphrews, Major ARTHUR S. MOORE, Middleton. For duty, from Fort Oglethorpe, Lieut. BYRON E. CHAPMAN, Albany.

To Camp MacArthur, Waco, Texas, with the board examining the command for nervous and mental diseases, from Camp Pike, Capt. JOHN MILLER, New York.

To Camp McClellan, Anniston, Ala., base hospital, from Philadelphia, Lieut. RUSSELL PEMBERTON, New York.

To Camp Meade, Annapolis Junction, Md., for duty, from Camp Beauregard, Lieut. WILLIAM GOLSTEIN, New York. With the board examining the command for nervous and mental diseases, from Fort McHenry, Lieut. FREDERICK P. SCHENKELBERGER, Gowanda.

To Camp Pike, Little Rock, Ark., base hospital, from Camp Custer, Capt. LEWIS H. TAFT, New York.

To Camp Sevier, Greenville, S. C., base hospital, Lieut. DANIEL V. CATALANC, Staten Island.

To Camp Sherman, Chillicothe, Ohio, as member of the tuberculosis examining board, from Camp A. A. Humphreys, Capt. EDWARD P. EGLES, New York.

To Camp Wadsworth, Spartanburg, S. C., base hospital, Capt. WILLIAM F. PLUMLEY, Rochester.

To Camp Wheeler, Macon, Ga., base hospital, Lieut. GEORGE W. WHEELER, New York. For duty, from Fort Oglethorpe, Lieuts. SAMUEL J. BLUMENTHAL, Brooklyn; MAX I. ORVEN, New York.

To Cleveland, Ohio, Lakeside Hospital, for instruction, from Fort Ontario, Lieut. DONALD E. BRACE, New York.

To Colonia, N. J., for temporary duty, from Fort Oglethorpe, Major FRED H. ALBEE, New York.

To Fort Leavenworth, Kan., for duty, from Camp Gordon, Lieut. HAROLD R. ROBERT, Dannemore.

To Fort McHenry, Md., base hospital, Lieut. JUNIUS W. STEPHENSON, New York.

To Fort McPherson, Ga., for duty, from Camp Hancock, Lieut. HUGH M. BULLARD, Brooklyn.

To Fort Oglethorpe, for duty, from Pullman, Lieut. ADFUR E. MAINES, New York. For instruction, Lieuts. RUDOLPH H. RUEDEMANN, Albany; LOUIS F. SARMANN, New York.

To Fort Sam Houston, Texas, Department Laboratory, from Army Medical School, Lieut. RALPH F. GREGORIUS, Corning.

To Hoboken, N. J., base hospital, from New York City, Capt. MILES W. JOHNS, Utica; Lieut. MILTON L. STRAHL, Brooklyn; from Fort Oglethorpe, Lieut. STANLEY E. ALDERSON, Albany. For duty, from Fort Oglethorpe, Capt. CHARLES P. ROACH, New York; from Army Medical School, Lieuts. DAVID M. GARDNER, Benson Mines; NATHAN WEINBERG, Brooklyn; GEORGE P. OLCOTT, New York.

To Lonoke, Ark., Signal Corps Aviation School, for duty, from Rantoul, Capt. SAMUEL M. STRONG, New York.

To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, Lieuts. PHILIP E. BERNSTEIN, Brooklyn; SAMUEL Z. ORGEL, New York; WILLIAM E. GAZELY, Schenectady; from New York City, Lieut. DAVID D. STOWELL, New York.

To New Haven, Conn., for duty, from Army Medical School, Capt. EWING TAYLOR, New York; from Camp Devens, Lieut. *EDWIN F.* SAMPSON, New York. Yale University, for duty, from Camp American University, Capt. JEAN R. OLIVER, New York.

To Newport News, Va., for duty, Lieuts. PHILIP B. BREGMAN, Bronx; MORRIS STAHL, Brooklyn; JULIUS R. ALMER, *JAMES* B. MILLER, EDWARD R. WARE, New York.

To New York City, Hospital for Ruptured and Crippled, for instruction, from Philadelphia, Lieut. JULIUS T. COHEN, Buffalo.

To Plattsburg Barracks, N. Y., for duty, from Camp Upton, Major AARON J. ROSANOFF, Kings Park.

To Princeton, N. J., for conference, and on completion *to his proper station*, from Camp Lee, Major EDWARD K. DUNHAM, Capt. RALPH A. KINSELLA, New York; from Rockefeller *Institute*, Major ALPHONSE R. DOCHEZ, New York.

To report [illegible] *general*, Philippine Department, *for duty*, from Fort [illegible] AROLD L. HUNT, New York.

To Rockefeller Institute for duty, and on completion *to Washington, D. C.*, Major CARROLL G. BULL, New York. For instruction in laboratory work, Capt. FRANK G. SCHAIBLE, New York. For instruction in the treatment of infected wounds, and on completion *to Camp Greene*, Charlotte, N. C., base hospital, Capt. BURDGE P. MacLEAN, Jr., Huntington.

To Walter Reed General Hospital, Takoma Park, D. C., for observation and treatment, from Edgewood, Capt. FREDERICK W. FILSINGER, Buffalo.

To Washington, D. C., for consultation, and on completion *to his proper station*, from New York, Lieut. HENRY W. HAYNES, New York.

To Waynesville, N. C., for observation and treatment, *from* Fort Screven, Capt. SPENCER FRANKLIN, New York.

The following orders have been revoked: *To Fort Oglethorpe* for instruction, Lieut. MORRIS H. NEWTON, Ilion. *To Hoboken, N. J.*, for duty, Lieut. OSCAR G. FINKLE, New York. *To Pittsburgh, Pa.*, Carnegie Building, for instruction, and on completion *to their proper stations*, from Camp Sherman, Capts. FREDERICK J. PFIESTERER, Ceres; MILTON G. BURCH, Hornell; LEWELL T. GENUNG, Worcester.

North Carolina

To Camp Bowie, Fort Worth, Texas, as orthopedic surgeon, from Philadelphia, Lieut. FRANCIS W. CARRUTHERS, Hillsboro.

To Camp Gordon, Atlanta, Ga., for duty, from Camp Wadsworth, Lieut. ADLAI S. OLIVER, Greensboro.

To Camp Hancock, Augusta, Ga., as orthopedic surgeon, from Philadelphia, Lieut. WILLLIAM MONCURE, Jr., Hamlet.

To Fort McPherson, Ga., base hospital, from Camp Beauregard, Lieut. HUGH E. CLARK, Rocky Mount, from *Camp* Bowie, Capt. HERBERT H. OGBURN Greensboro; from Camp Hancock, Capt. JACOB H. SHUFORD, Hickory, from Camp McClellan, Capt. ARTHUR T. PRITCHARD, Asheville; Lieut. ANZI J. ELLINGTON, Raleigh; from Camp Sevier, Lieut. MILTON T. EDGERTON, Jr., Greenville; from C[illegible] Lieuts. LEWIS M. GRIFFITH, Asheville; JOHN E. [illegible] from Fort Oglethorpe, Major MARSHALL H. F[illegible] LOUIS G. BEALL, Asheville; EDWARD C. ASHBY, Greensboro; THOMAS M. STANTON, High Point; ALVIN C. McCALL, Rocky Mount; SAM W. HURDLE, Spray; JAMES F. ROBERTSON, Jr., Wilmington.

To Fort Oglethorpe for instruction, Capt. CHARLES E. WOODING, Winston-Salem.

To Hoboken, N. J., for duty, from Army Medical School, Lieut. HENRY B. MAXWELL, Whiteville.

To report by wire to the commanding ge[illegible] ment, for assignment to duty, Lieut. JOHN [illegible]

To Rockefeller Institute for instruction in [illegible] C. HODGES, Greenville.

Honorably discharged, Lieut. THURMAN G. WRIGHT, Elizabeth City.

North Dakota

To Camp Gordon, Atlanta, Ga., for duty, Lieut. WALTER D. BAYARD, Fargo.

To Camp Jackson, Columbia, S. C., for duty, from Fort Oglethorpe, Lieut. JOHN A. JOHNSON, Jr., Grand Forks.

Ohio

To Army Medical School for instruction, from Fort McPherson, Lieut. WALTER S. BENNETT, Cardington.

To Camp A. A. Humphreys, Accotink, Va., base hospital, from Walter Reed General Hospital, Major FRANK WINDERS, Columbus.

As orthopedic surgeon, and on completion *to his proper station*, from Army Medical School, Capt. ELMER A. KLEIN, Norwood.

To Camp Cody, Deming, N. M., as orthopedic surgeon, from Philadelphia, Lieut. RUDOLPH S. REICH, Cleveland.

To Camp Crane, Allentown, Pa., for duty, from Cleveland, Capt. HENRY K. YAGGI, Salem; Lieut. JOHN A. MELLON, Columbiana.

To Camp Fremont, Palo Alto, Calif., base hospital, from Fort Riley, Capt. ALBIN M. PAINTER, Youngstown.

To Camp Gordon, Atlanta, Ga., for duty, Lieuts. JOHN R. WARREN, Lower Salem; CLIFFORD G. SMITH, Marion; from Camp McClellan, Lieut. THOMAS H. BROWN, Toledo.

To Camp Jackson, Columbia, S. C., for duty, from Camp Lee, Lieut. MILTON B. COHEN, West Salem.

To Camp Laurel, Laurel, Md., for duty, from Hoboken, Major WILLIAM W. CONGER, Toledo.

To Camp Pike, Little Rock, Ark., for duty, Lieut. LEROY S. HENNEN, Leetonia; from Fort McPherson, Lieut. WILLIAM L. LAYPORT, Cincinnati.

To Camp Sevier, Greenville, S. C., base hospital, from Ann Arbor, Lieut. JAMES McC. McGEORGE, Salem.

To Fort McPherson, Ga., base hospital, from Camp Shelby, Capt. HARRY S. NOBLE, St. Mary's; from Fort Oglethorpe, Capt. SIDNEY D. FOSTER, Toledo.

To Fort Oglethorpe for instruction, Lieut. EDWIN E. SHEFFIELD, Elyria.

To Hoboken, N. J., for duty, from Army Medical School, Lieut. JAMES G. SMAILES, Coshocton.

To Orono, Me., University of Maine, to make physical examinations and give medical attention to the drafted men enrolled at that institution, and on completion *to his proper station*, from Camp Devens, Lieut. EDWARD REMY, Jr., Mansfield.

To Portland, Ore., Yeon Building, for duty, from Camp Greene, Lieut. EDGAR D. ALLEN, Crooksville.

To report by wire to the commanding general,, Central Department, for assignment to duty, Capt. JOHN L. TRAVIS, Germantown.

To Rockefeller Institute for instruction in laboratory work, Lieut. ROLL H. MARKWITH, Columbus. On completion *to Washington, D. C.*, for duty, Lieut. ROBERT B. STEVENSON, Columbus.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, Capt. ALBERT G. FREIBERG, Cincinnati; from Camp Jackson, Lieut. GEORGE B. BOOTH, Toledo.

The following orders have been revoked: *To Pittsburgh, Pa.*, Carnegie Building, for instruction, and on completion *to their proper stations* from Camp Sherman; Capt. VICTOR BIDDLE, Stubenville; Lieut. CHARLES S. JACKSON, Edison.

Oklahoma

To Camp Beauregard, Alexandria, La., base hospital, Lieut. CHARLES B. TAYLOR, Oklahoma City.

To Camp Jackson, Columbia, S. C., for duty, from Camp Dix, Lieut. EARL F. VANDEVER, Lahoma.

To Camp Laurel, Laurel, Md., for duty, from Camp Grant, Lieut. CECIL B. SHROUT, Shawnee.

To Camp Sevier, Greenville, S. C., base hospital, Lieut. LLOYD M. SACKETT, Oklahoma City.

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieut. POWELL L. HAYS, Vinita.

To Fort Oglethorpe for instruction, Lieut. FRANK THOMASON, Drumright.

To Fort Sam Houston, Texas, for temporary duty, from Camp MacArthur, Lieut. JOHN A. WALKER, Shawnee.

To Hoboken, N. J., for duty, from Army Medical School, Lieut. ELIJAH S. SULLIVAN, Oklahoma City.

To Portland, Ore., Yeon Building, for duty, from Camp Greene, Lieut. WALTER M. SYKES, Ramona; from Fort Sill, Lieuts. ELMER E. HEADY, Buffalo; JAMES W. WHEELER, Gracemont; ROBERT L. BAKER, Wynnewood; from Houston, Lieut. GEORGE B. COKER, Cyril; from Memphis, Lieut. WILLIAM C. FASHEE, Grandfield.

To report to the commanding general, Philippine Department, for duty, from Chicago, Capt. FANTON M. SANGER, Oklahoma City.

Oregon

To Army Medical School for instruction, Lieut. GUY C. MILNOR, Portland.

To Fort Oglethorpe for instruction, from Fort Riley, Lieuts. FRANK E. BUTLER, Hot Lake; JULIUS H. GARNJOBST, Salem.

To Hoboken, N. J., base hospital, from Camp Lewis, Capt. OTIS B. WIGHT, Portland.

To Newport News, Va., as orthopedic surgeon, from Philadelphia, Capt. EDGAR H. BROWN, McMinville.

To report by wire to the commanding general, Western Department, for assignment to duty, Lieut. FRANK C. HART, Portland.

Pennsylvania

To Americus, Ga., Signal Corps Aviation School, for duty, *from* Camp Greene, Major WALTER S. CORNELL, Philadelphia.

To Army Medical School for instruction, from Camp Sherman, Lieut. LAWRENCE H. FITZGERALD, Pittsburgh. On completion to Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Camp Gordon, Lieut. WILLIAM C. ELY, Philadelphia.

To Baltimore, Md., Johns Hopkins University, for duty, and on completion *to his proper station*, from Cape May, Major CHARLES H. FRAZIER, Philadelphia.

To Boston, Mass., for duty, Lieuts. GEORGE A. PARKER, Pottsville; WILLIAM L. CRAWFORD, Dillsbury.

To Buffalo, N. Y., for duty, from Walter Reed General Hospital, Capt. WILLIAM P. McINTOSH, Philadelphia.

To Camp A. A. Humphreys, Accotink, Va., base hospital, and on completion *to Army Medical Sc*[illegible] Army Medical School, Lieut. ROBERT [illegible] For duty, from Fort Andrews, Lieut. [illegible] Barre.

To Camp American Univer[illegible] C., for duty, from Camp Sevier, Capt. JOSEPH [illegible]

To Camp Crane, Allentown [illegible], from Camp Grant, Lieut. EUGENE C. MURPHY, Philadelphia; from Cleveland, Lieut. CHARLES D. BIERER, Uniontown.

To Camp Dix, Wrightstown, N. J., base hospital, Major ALLEN JOHN SMITH, Philadelphia; Lieut. FLOYD D. LOHR, Bradenville. With the board examining the command for nervous and mental diseases, Lieut. JOSEPH P. BOYLE, Lansford.

To Camp Gordon, Atlanta, Ga., for duty, Lieuts. ALBERT V. CROSBY, Abington; WILLIAM T. MARTIN, Pelzer; WILLIAM H. HAUCK, Philadelphia; from Camp Greene, Capt. WILLIAM P. CLANCY, Clarendin; from Camp Meade, Lieut. ROBERT McR. BIDDLE, Ashland; from Williamsbridge, Lieut. CLAUDE L. BRADFORD, *Pittsburgh.*

To Camp Greene, Charlotte, N. C., base hospital, from Philadelphia, Capt. WALTER B. HARVEY, Pittsburgh. For duty, Lieut. CHARLES O. PETERS, *Albion.*

To Camp Hancock, Augusta, Ga., base hospital, Lieut. DANIEL W. FRYE, *Pittsburgh.*

To Camp Jackson, Columbia, S. C., base hospital, from Philadelphia, Capt. CLEMENT R. BOWEN, Philadelphia. For duty, Lieut. PAUL S. SEABOLD, Philadelphia. With the board examining the command for nervous and mental diseases, Lieut. WILLIAM C. MILLER, Warren; from Camp Hancock, Lieut. WILLIAM M. DONOVAN, Philadelphia.

To Camp Las Casas, San Juan, Porto Rico for duty, Lieut. RAMON J. SIFRE, Philadelphia.

To Camp Leach, Washington, D. C., for duty, Lieut. HIRAM G. STRAUB, Minersville.

To Camp Lee, Petersburg, Va., base hospital, from Camp Wadsworth, Capt. CLARK N. YEAGER, Wilkes-Barre.

To Camp Logan, Houston, Texas, base hospital, from Camp Gordon, Major LINNAEUS H. PRINCE, Philadelphia.

To Camp Meade, Annapolis Junction, Md., base hospital, Capt. HARRY H. LOTT, Philadelphia. For duty, from Army Medical School, Capt. JAMES A. BUCHANAN, Strickersville; Lieut. LAWRENCE L. BLACKBURN, Philadelphia.

To Camp Sevier, Greenville, S. C., base hospital, Major GEORGE FETTEROLF, Philadelphia.

To Camp Upton, L. I., N. Y., with the board examining the command for nervous and mental diseases, Lieut. EDGAR M. BLEW, Allentown.

To Camp Wadsworth, Spartanburg, S. C., for duty, Capt. ALBERT C. LAMADE, Williamsport.

To Camp Wheeler, Macon, Ga., for temporary duty, from Fort Oglethorpe, Lieut. JOHN M. CONNOLLY, Philadelphia.

To Camp Zachary Taylor, Louisville, Ky., as orthipedic surgeon, from Philadelphia, Lieut. HOWARD S. MYERS, *Pittsburgh.*

To Fort McPherson, Ga., base hospital, from Camp Meade, Lieut. DON D. BROOKS, Connellsville; from Camp Sevier, Lieut. SAMUEL B. STURGIS, Philadelphia.

To Fort Oglethorp[illegible] MYER SOLIS COHEN, Philadelphia; Lieut. [illegible] Philadelphia, CLARENCE J. McCULLOUGH, [illegible] *erdeen, Md., Lieut.* WILLIAM C. REESE, [illegible] iladeljhia, Lieut. ALBERT T. RANSOME, Philadelphia.

To Fort Screven, Ga., for duty, Capt. ARTHUR C. MORGAN, Philadelphia.

To Hamilton and Toronto, Ontario, Can., [illegible] completion *to his proper station*, Major ISAAC [illegible]

To Hoboken, N. J., base hospital, Lieut. BEN[illegible] Philadelphia; from Camp Meade, Lieut. JACC[illegible] For duty, from Army Medical School, Lieu[illegible] Geneva; from Camp Grant, Lieut. THOMAS [illegible]

To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, Lieuts. HAROLD F. LANSHE, Allentown; HARRY W. BACHMAN, Philadelphia.

To New Haven, Conn., Yale University, for duty, from Camp Leach, Capt. JOSEPH LEIDY, Philadelphia. For duty, Capt. ISAAC H. ALEXANDER, Pittsburgh; from Fort Oglethorpe, Lieut. HAROLD W. KINDERMAN, Philadelphia.

To Newport News, Va., for duty, Lieuts. VICTOR K. MARSTELLER, Bethlehem; EDGAR C. NIEBAUM, Pittsburgh.

To New York City, [illegible] for instruction, from Camp Jackson, Major EV[illegible] Pittsburgh. School for Military Roentgenology, [illegible] on completion *to his proper station*, from Fort Oglethorpe, Major WILLIS F. MANGES, Philadelphia.

To Plattsburg Barracks, N. Y., for duty, from Cape May, Lieut. CLARENCE A. PATTEN, Philadelphia.

Resignation of Capt. EDWARD B. GLEASON, Philadelphia, accepted.

The following order has been revoked: *To Hoboken, N. J.*, for duty, Capt. ISAAC H. ALEXANDER, Wilkinsburg.

Porto Rico

To Camp Las Casas, San Juan, P. R., for duty, Lieut. AMNUEL F. NATER, San Juan.

Rhode Island

To Camp McClellan, Anniston, Ala., base hospital, from Army Medical School, Lieut. EDWARD W. MULLIGAN, Providence.

To Camp Sherm[illegible]se hospital, from Camp Doniphan, Capt. HC[illegible] Providence.

To Portland, Ore[illegible] from Lake Charles, La., Lieut. KENNETH [illegible]

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Fort McHenry, Md.*, for duty, Capt. WILLIAM B. CUTTS, Providence.

South Carolina

To Camp Crane, Allentown, Pa., base hospital, from Camp Jackson, Capt. WILLIAM H. JOHNSON, Charleston.

To Camp Hancock, Augusta, Ga., base hospital, from Camp Lee, Lieut. RALPH H. McFADDEN, Chester.

To Camp Jackson, Columbia, S. C., for duty, Lieut. WILLIAM H. MATHIS, Collins; from Williamsbridge, Lieut. LADSON D. BOONE, Charleston.

To Camp Travis, Fort Sam Houston, Texas, as assistant to camp surgeon, from El Paso.

To Fort McHenry, Md., for duty, from Camp Meade, Lieut. WILLIAM R. JOHNSON, Windsor.

To Hoboken, N. J., for duty, from Army Medical School, Lieut. COLLINS E. SMITH, Ridgeville.

South Dakota

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieuts. ARCHIE P. KIMBALL, Colome; GEBBARD J. LONG, Oldham.

To Milwaukee, Wis., base hospital, from Camp Zachary Taylor, Lieut. CARL N. HARRIS, Wilmot.

To Portland, Ore., Yeon Building, for duty, from Camp Greene, Lieut. HARLEY D. NEWBY, Parker.

To San Francisco, Calif., for duty, Capt. ALFRED C. ALLEN, Deadwood.

Tennessee

To Camp Dix, Wrightstown, N. J., base hospital, from Fort Riley, Lieut. PERCY D. BIDDLE, Columbia.

To Camp Dodge, Des Moines, Ia., base hospital, from Camp Travis, Lieut. ELMER S. MAXWELL, Nashville.

To Camp Gordon, Atlanta, and *Camp Forrest*, Chickamauga Park, Ga., for duty, from Camp McClellan, Capt. LEE A. STONE, Memphis. *To Camp Gordon* for duty, Capt. EDWARD T. WEST, Johnston City; Lieut. JAMES H. JONES, Hampshire; from Fort Oglethorpe, Lieut. VIRGIL E. MASSEY, Knoxville.

To Camp MacArthur, Waco, Texas, as orthopedic surgeon, from Philadelphia, Lieut. BEECHER L. OGLE, Knoxville.

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieut. JOHN B. CROSS, Wheat.

To Camp Wadsworth, Spartanburg, S. C., and *Camp Hancock*, Augusta, Ga., for duty, from Camp Forrest, Capt. LEE A. STONE, Memphis.

To Portland, Ore., Yeon Building, for duty, from Lonoke, Ark., Capt. CHARLES W. BROWN, Nashville; from Fairfield, Ohio, Lieut. HUGH W. ALLAN, Knoxville.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School* for duty, Lieut. DURWARD B. ROACH, Nashville.

To Washington, D. C., for duty in the Surgeon-General's Office, from Camp Meade, Major EDWARD C. ELLETT, Memphis.

Resignation of Major MATTHEW C. McGANNON, Nashville, accepted.

The following orders have been revoked: *To Fort Oglethorpe* for instruction, Capt. DAVID R. NEIL, Nashville. *To Pittsburgh, Pa.*, Carnegie Building, for instruction, and on completion *to their proper stations*, from Camp Sherman, Lieuts. JOHN S. MILLER, Colliersville; THOMAS W. MENEES, Nashville.

Texas

To Army Medical School for instruction, from Camp MacArthur, Capt. EUGENE V. POWELL, Fort Worth; from Camp Devens, Lieut. ERNEST J. STEVENS, San Antonio.

To Camp Beauregard, Alexandria, La., base hospital, from Camp Cody, Capt. THOMAS C. BROOKS, Bay City.

To Camp Bowie, Fort Worth, Texas, base hospital, from Camp Travis, Lieut. THOMAS T. JACKSON, San Antonio.

To Camp Devens, Ayer, Mass., base hospital, from Fort Riley, Lieut. MELVIN O. REA, Dallas.

To Camp Doniphan, Fort Sill, Okla., as orthopedic surgeon, from Philadelphia, Lieut. CARL B. YOUNG, Jr., Houston.

To Camp Kearny, Linda Vista, Calif., base hospital, from Camp Cody, Lieut. WILLIAM T. DUNNING, Gonzales.

To Camp MacArthur, Waco, Texas, base hospital, from Army Medical School, Lieut. GEORGE M. JONES, Smithville. For duty, Lieuts. AUGUST J. STREIT, Marlin; LEWIS S. JOHNSTON, San Antonio.

To Camp Pike, Little Rock, Ark., for duty, from Army Medical School, Lieut. HUBERT L. BROWN, Sherman.

To Camp Travis, Fort Sam Houston, Texas, base hospital, from Camp Cody, Capt. MILES J. DUNCAN, Dallas. For duty, Lieuts. ROGERS W. McKEAN, Fort Worth; OSCAR M. DILLEN, Lufkin; FRED A. [illegible]LIN, San Antonio; HENRY C. BAILIFF, EDWARD E. YEAGER, Temple.

To Fort Bliss, Texas, for temporary duty, from Camp MacArthur, Capt. DAVID H. LAWRENCE, El Paso.

To Fort Oglethorpe for instruction, from *Camp Hancock*, Lieut. JOHN C. THOMAS, Taylor; from *Camp Logan*, Lieut. JOSEPH E. McDOWELL, Shamrock; from Everman, Texas, Lieut. JOSEPH H. HICKS, Elkhart.

To Fort Sam Houston, Texas, base hospital, from Fort Douglas, Lieut. EDWARD J. BURUS, Carrizo Springs.

To Hoboken, N. J., for duty, from Camp Cody, Lieut. CHARLES C. COOKE, Keene; from Fort Oglethorpe, Lieut. PERE M. KUYENDALL, Moody.

To Houston, Texas, Signal Corps Aviation School for duty, from West Point, Lieut. ERASTUS B. WHEAT, Cooper.

To Portland, Ore., Yeon Building, for duty, from Camp Dick, Lieut. LYLE G. THORNTON, West Point; from Camp Greene, Lieut. EDW. J. BURNETT, San Antonio; from Houston, Lieut. HOMER T. ELKINS, Sinton.

To report to the Commanding general, Philippine Department, for duty, from Camp MacArthur, Lieut. JOHN W. BROWN, Pearsall.

To San Antonio, Texas, Signal Corps Aviation School, for duty, from Mineola, Lieut. WILSON M. BASSETT, San Antonio.

To West Point, Miss., Signal Corps Aviation School, for duty, from San Antonio, Capt. WILLIAM R. JAMIESON, El Paso.

Utah

To Dallas, Texas, for duty, from Mineola, Capt. ROBERT R. HAMPTON, Salt Lake City.

To report by wire to the commanding general, Western Department, for assignment to duty, Lieut. REINHOLD KANZLER, Ogden.

Vermont

To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieut. WILLIAM A. FLOOD, North Bennington.

To Camp Leach, Washington, D. C., for duty, Lieut. CLAIBORNE WILCOX, Norfolk.

To Camp Lee, Petersburg, Va., base hospital, from Camp Sevier, Capt. WILLIAM B. PORTER, Richmond. For duty, from Fort Oglethorpe, Lieut. WALTER D. SIMMONS, Richmond.

To Fort Oglethorpe for instruction, Lieut. JAMES McN. FADSLEY, Falls Church.

To New Haven, Conn., for duty, Lieut. JAMES L. STRINGFELLOW, Norfolk.

To report to the commanding general, Philippine Department, for duty, from Camp Custer, Lieut. ARTHUR HOOKS, Blackstone.

Washington

To Camp Fremont, Palo Alto, Calif., base hospital, from Camp Kearny, Capt. COPELAND PLUMMER, Seattle.

To Fort Oglethorpe for instruction, from Fort Riley, Lieut. LORENZO S. DEWEY, Okanogan.

To Hoboken, N. J., base hospital, from Mayo Clinic, Lieut. HUBBARD T. BUCKNER, Seattle.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to his proper station*, from Camp Meade, Lieut. WHITTING B. MITCHELL, Sumner.

To Portland, Ore., Yeon Building, for duty, from Houston, Major ROBERT A. ALLEN, Tacoma; *from Anchorage, Alaska, Lieut.* CHAS. C. BENEDICT, Seattle.

To San Diego, Calif., Signal Corps Aviation School, as flight surgeon, from Mineola, Capt. RICHARD W. PERRY, Seattle.

West Virginia

To Arcadia, Fla., Signal Corps Aviation School, as flight surgeon, from Mineola, Capt. WILLIAM W. GILL, Richmond.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. SAMUEL B. NICKELS, Big Stone Gap.

To Boston, Mass., Franklin Union Training Detachment, for duty, Lieut. ULYSSES G. ARNETT, Henderson.

To Camp A. A. Humphreys, Accotink, Va., *for duty, from* Fort Oglethorpe, Capt. McRAE C. BANKS, Raleigh.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. RICHARD L. DEVEREUX, Wheeling.

To Camp Grant, Rockford, Ill., base hospital, from Army Medical School, *Lieut.* JOHN P. FARSON, Century.

To Camp Jackson, Columbia, S. C., *for duty*, Lieut. HERSCHEL R. YOST, Fairmont.

To Camp Pike, Little Rock, Ark., base hospital, from Army Medical School, Lieut. SOLOMON L. CHERRY, Clarksburg.

To Camp Upton, L. I., N. Y., with the board examining the command for nervous and mental diseases, Capt. CECIL DENHAM, Buckhannon.

To Newport News, Va., for duty, Lieut. EDGAR W. SMOOT, Glendenin.

Wisconsin

To Camp Devens, Ayer, Mass., as assistant to the camp surgeon, from Hoboken, Major E. J. BARRETT, Sheboygan.

To Camp Grant, Rockford, Ill., base hospital, Lieut. TIMOTHY J. HOWARD, Milwaukee.

To Portland, Ore., Yeon Building, for duty, from Arcadia, Lieut. CHARLES F. REHLING, Fremont.

To report to the Commanding general, Philippine Department, for duty, from Camp Custer, Lieut. MARTIN DuFRENNE, Middleton.

To Washington, D. C., for duty, and on completion *to his proper station*, from Cape May, Capt. J. GURNEY TAYLOR, Milwaukee.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest; such as relate to society activities, new hospitals, education, public health, etc.)

CALIFORNIA

Health Subsidy Restored by State.—On being informed that $5,000 has been appropriated for the maintenance of a tuberculosis ward at the San Francisco Hospital, and that the board of supervisors have voted to select a site for a new tuberculosis sanatorium, the state board of health has restored the state subsidy to the San Francisco Hospital.

Personal.—Dr. Robert A. Peers, Colfax, who resigned recently from the state board of health to enter military service, has arrived in France.——Dr. William L. Whittington, Santa Rosa, has been appointed first assistant physician at the Sonoma State Home.——Dr. James G. Baird has resigned as a member of the board of health of Riverside.——Dr. John P. Gilmer has resigned as police surgeon at the Receiving Hospital, Los Angeles, to enter the Naval service and has been succeeded by Dr. Clayton G. Stadfield.——Dr. Charles W. Girdlestone has resigned as health officer of Riverside.——Dr. Placida Gardner, city bacteriologist of Los Angeles, has started for France.——Dr. Carl P. Jones, Grass Valley, has accepted the directorship and organization of Naval Station Hospital Unit No. 11.

GEORGIA

Cancer Committee Appointed.—At the meeting of the State Medical Association of Georgia in April, a committee was appointed to educate the public and call the attention of the profession to the increasing danger of cancer. The committee is composed of twelve members, one from each congressional district of the state. Dr. James L. Campbell, Atlanta, is chairman.

ILLINOIS

Violators of Practice Act Convicted.—The department of registration and education reports that it has recently secured convictions for violations of the medical practice act in the following cases:

Martin Krause, Chicago. Fined $100 and costs.
Philip H. Griggs, Jacksonville. Fined $50 and costs.
Mrs. Ella Brown, Hillsboro. Fined $75 and costs.
Mrs. Emma Calvin, Monticello. Awaiting sentence.
H. N. Mettler, Rock Island. Fined $200. Appealed to Supreme Court
D. Cecilio, Witt. Fined $50 and costs.
George Granthau, Irving. Fined $50 and costs.
J. J. Vizgird, East St. Louis. Fined $200 and costs.
Dora Dennis, East St. Louis, Fined $75 and costs.
J. W. McClellan, East St. Louis. Fined $50 and costs.
Joseph R. Kloppenburg, East St. Louis. Fined $50 and costs.
A. P. Milliken, Somonauk. Fined $25 and costs.
S. Hirschfield, Chicago. Fined $100 and costs.
James Brown, Springfield. Fined $50, with thirty days in jail.
L. G. Lewis, Galesburg. Fined $25 and costs.
C. E. Brandt, Bushnell. Fined $25 and costs.
Wm. B. Wilson, Hoopeston. Fined $25 and costs.
R. R. Roberts, Chicago. Fined $50 and costs.
R. Langfields, Chicago. Fined $100 and costs.
C. Claybourn, Centralia. Fined $150 and costs.
J. J. McCue, Springfield. Fined $25 and costs.
Johann Henrich Wilhelm Harmsen, Chicago. Fined $25 and costs.
W. L. Myers, Bushnell. Fined $25 and costs.
Barbara Glaum, Chicago. Fined $150 and costs.

The following cases are pending:

L. Brodawicz, East St. Louis. Held to circuit court; $1,000 bond.
F. C. Shaklee, Galesburg. Held for action of grand jury; $300 bond.
E. S. Spaulding, Cairo. Held for action of grand jury; $300 bond.

Chicago

Election of Officers.—At the annual election of the Chicago Medical Society, held June 18, the following officers were elected: president, Dr. John V. Fowler; secretary, Dr. Hugh N. MacKechnie.

INDIANA

College News.—Contracts for the erection of a new building for the Indiana University School of Medicine, Indianapolis, on the grounds of the Robert W. Long Hospital, were awarded at a recent meeting of the trustees. Plans to continue the Indiana School of Medicine without vacation have been announced by the registrar of the institution.

City Health Board Changes.—Drs. Thomas B. Eastman, Robert O. Alexander, Willis D. Gatch, all of Indianapolis, have resigned as members of the city board of health and charities on request of the mayor. Dr. Gustavus B. Jackson, president of the board, has resigned to enter military service. Drs. James C. Carter and Harry E. Gabe have been appointed members of the board.

IOWA

Personal.—Dr. Guilford H. Summer, Des Moines, secretary of the state board of health, has been unanimously reelected to the position for a term of five years.——Dr. George S. Muirhead, Marion, was operated on for cholecystitis, May 24, at Mercy Hospital, Cedar Rapids, and is reported to be doing well.——Dr. David M. Ghrist, Ames, was seriously injured in an interurban wreck near Boone, May 9, and is under treatment in the Mary Greeley Hospital.

MARYLAND

Service Flag.—A service flag bearing twenty-six stars has been suspended between the two buildings of the Shepherd and Enoch Pratt Hospital, near Touson.

Government Not to Buy Quarantine Station.—On account of the enormous demands upon the federal treasury for war purposes, the House committee on appropriations has refused to consider the expenditure at this time of $176,000 for the purchase of the Baltimore city quarantine station and its equipment, which had been recommended by the United States Public Health Service. The Baltimore quarantine is the only one of the city and state maintained quarantine services which the federal government has not taken over and made a part of its federal quarantine system. Assistant Surg.-Gen. Richard H. Creel stated before the committee that the Baltimore quarantine service is satisfactorily maintained by the city at a cost of about $24,000 a year. This the Public Health Service believes the government can reduce to $10,000 or $12,000. The quarantine service was turned over to the government by the city a few weeks ago at a rental of $1 a year, pending action on the congressional appropriation. The intention of the city officials was to use the money from quarantine in establishing a new municipal hospital in the western part of the city.

Personal.—Major Alfred P. Roope of the Medical Reserve Corps has arrived at General Hospital No. 2, Fort McHenry, from Camp Lee, Va. There are now in the hospital about 300 patients.——Dr. Charles A. Reifschneider, Medical Reserve Corps, medical superintendent of the University Hospital, has been ordered to Camp Meade, Md. He has been assigned to Evacuation Hospital No. 19. Dr. Harry Schmuck, Baltimore, has been made superintendent of the hospital in place of Dr. Reifschneider.——Dr. J. Carroll Monmonier, Catonsville, captain in the hospital corps, who has been for some months in France, has been made chief of the medical and sanitary staff of one of the hospitals near the front, having been transferred from the aero squadron to which he was attached.——Dr. C. Frank Jones, a health warden of Baltimore city, is recovering from an operation performed at St. Joseph's Hospital. Dr. Jones was city diagnostician during the outbreak of infantile paralysis two years ago.——Dr. Luigi D. Stefano has been appointed health warden of the fifth ward of Baltimore, succeeding Dr. Joseph E. Heard, deceased.——Dr. Edward P. Smith, superintendent of Mercy Hospital, Baltimore, resigned, May 29.——Dr. George Y. Massenburg has returned to Baltimore after eight months' service with the Roumanian Red Cross.——Dr. H. G. Tonkin has been elected mayor of Martinsburg.——Dr. Mildred Jencks, who will sail for China in August to become resident physician of the David Gregg Hospital for Women and Children, was the guest of honor at an informal reception held in the Brown Memorial Church, May 7.

MASSACHUSETTS

Laboratory for Cancer Research.—A new laboratory building for the Huntington Memorial Hospital for Cancer Research, Boston, is to be erected at an estimated cost of $6,000, one third of which has already been obtained.

Sentence Confirmed.—It is reported that the state supreme court has decided that Dr. Lemuel F. Noble, Roxbury, Boston, must serve a term of eighteen months at Dear Island; this sentence was imposed by the superior criminal court a year ago, when he was found guilty on ninety-six counts of an indictment charging the unlawful prescribing of narcotic drugs.

Personal.—Dr. Albert M. Shattuck, Worcester, has succeeded Mr. Perreault as trustee of the Grafton State Colony. ——Dr. William H. Coon, formerly of Wakefield, has resigned as director of public health of St. Louis, in order to accept a position of director of health and sanitation of the Federal Ship Building Board.——Dr. Frank C. Richardson, *Brookline*, who has been seriously ill with neuritis, is reported to be improving.——Dr. Ernest V. Scribner, Worcester, is a patient at the Peter Brent Brigham Hospital, Boston.——Dr. Arthur W. Gilbert, secretary to the committee on agriculture of the Boston Chamber of Commerce, has been appointed milk administrator for New England by the New England Regional Milk Commission.——Dr. Ada F. Harris, Worcester, has been appointed pathologist of the Massachusetts State Hospital, Grafton.

District Society Meetings.—Franklin District Medical Society elected officers at Springfield, May 14, as follows: president, Dr. Charles Moline, Sunderland; vice president, Dr. John A. Mather, Colerain; secretary, Dr. Frank A. Millett, Greenfield.——Bristol South District Medical Society at New Bedford, May 9: president, Dr. Joseph A. Barre, Fall River; vice president, Dr. Edwin D. Gardner, New Bedford; secretary-treasurer, Dr. Alanson J. Abbe, Fall River.——Worcester District Medical Society at Worcester, May 8: president, Dr. William L. Johnson, Uxbridge; vice president, Dr. William J. Delahanty, Worcester; secretary, Dr. George A. Dix, Worcester; treasurer, Dr. George O. Ward, Worcester. ——South Essex District Society at Nahant, May 7: president, Dr. John J. Egan, Gloucester; vice president, Dr. Carolus M. Cobb, Lynn; secretary, Dr. Hamlin P. Bennett, Lynn; treasurer, Dr. George Z. Goodell, Salem.

Faculty Changes.—At the last meeting of the board of overseers of Harvard University, Dr. Richard C. Cabot was made clinical professor of medicine; Dr. Eugene A. Crockett, Le Compt, professor of otology; Dr. Franklin S. Newell, Boston, clinical professor of obstetrics; Dr. William Worth Hale has succeeded Dr. McIver Woody, Boston, as secretary of the medical faculty; Dr. Edwin A. Locke has been appointed assistant professor of medicine; Drs. Fritz B. Talbot and Charles H. Dunn, Boston, instructors in pediatrics; Dr. Robert M. Green, instructor in anatomy; Dr. Calvin G. Page, instructor in bacteriology; Dr. Frederick E. Jones, instructor in dermatology; Dr. Ernest W. Goodpasture, instructor in pathology, and Edward A. Boyden, instructor in comparative anatomy. Dr. Alexander Quackenboss has been granted leave of absence to enter government war work. Drs. Martin J. English, assistant professor in medicine; Horace K. Sowles, alumni assistant in surgery; Francis M. Rackemann, assistant professor of medicine, and James B. Ayer, instructor in anatomy, have resigned. The following appointments have been made: Dr. William A. Perkins, alumni assistant in surgery; Dr. Algernon Coolidge, acting dean of the graduate school of medicine; Dr. William B. Robbins, alumni assistant in medicine; Dr. William N. Souter, Portsmouth, N. H., instructor in ophthalmology.

MISSOURI

Prosecution of Midwives.—The second successful prosecution of a midwife for negligence and failure to report and properly to care for a case of ophthalmia neonatorum, undertaken by the Missouri Commission for the Blind, St. Louis, resulted in the imposition of a fine of $25 on Mrs. Ida Diamant, a local midwife. The prosecution was made through the St. Louis Department of Health. The midwife had failed to report a case of ophthalmia neonatorum. The baby lost one eye; the other was saved by skilful medical attention.

NEBRASKA

Medical School Not Recognized.—It is reported that the Nebraska State Board of Health has endorsed the action of the advisory board in refusing to permit graduates of the Lincoln Medical College to take the examination for the practice of medicine in that state. It was claimed that the medical school has not conformed to the requirements of the state law.

Personal.—Dr. Harris A. Newell, Marshalltown, Iowa, has been appointed first assistant physician at the Lincoln State Hospital, succeeding Dr. Frank S. Marnell, promoted to the position of assistant superintendent.——Dr. Edward Bollinger, first assistant physician at the Hastings State Hospital, has resigned.——Dr. Laureston A. Merriam, Omaha, was struck by an automobile, May 26, and sustained serious injuries.——Dr. Ernest T. Manning has been appointed health commissioner of Omaha.——Dr. Michael J. Ford, Omaha, who has been ill with pneumonia for six weeks, has recovered.

NEW YORK

Personal.—Canisius College has conferred on Dr. William G. Bissell of Buffalo the honorary degree of Doctor of Laws.——Dr. Joseph B. Ringland, Oswego, has been elected president; Dr. Edward J. Wynkoop, Syracuse, vice president, and Dr. Herman G. Weiskotten, Syracuse, secretary, of the Syracuse University College of Medicine Alumni Association.

Free Milk for Babies.—Five new milk stations have been added to the eight that are maintained all the year around by Nathan Strauss. These stations will not only supply milk to babies but will give it free of cost to soldiers and sailors. Of sixty-three babies examined on one day recently at the New York Diet Kitchen Association, more than 50 per cent. were suffering from malnutrition. To remedy the conditions found at the various examination centers, a canvass for the purpose of bringing babies under supervision has been planned. A census of New York's 600,000 children of less than 5 years of age is to be made. It has been found that one visitor reaches about fifty children a day and a physician can examine about thirty babies a day.

New War Hospitals.—The War Department has taken the ten-story building at the northwest corner of Lexington Avenue and Twenty-Second Street, which has just been completed by the city for the Manhattan Trade School for Girls, for use as a war hospital.——The New York Homeopathic Medical College and Flower Hospital has completed plans to convert a six-story factory building on East Sixty-Third Street into a hospital for wounded soldiers. This property adjoins the Flower Hospital. It is estimated that the changes in the building and the equipment will cost about $100,000.——Ground has been broken at 18 West One Hundred and Thirty-Third Street for a hospital to be known as the McDonough Hospital. The building is to cost about $100,000. It will be a regulation base hospital and will accommodate 200 patients. It is to be used exclusively for negro patients. White physicians will head the departments temporarily until negro physicians are trained to take over the work. Dr. Charles N. Dowd will head the surgical department. Dr. Howard C. Taylor and Dr. William P. Healy will also be on the staff temporarily.

New York City

Instruction in Health Work for Young Children.—In cooperation with the Peoples' Institute, Federation for Child Study, and the Bellevue Social Service, a course in war-time training for volunteers in health work for children of school age is now being conducted by Teachers College, Columbia University, under the auspices of the nutritional committee.

Personal.—Dr. C. H. Stockwell, surgeon of the *Carolina*, which was torpedoed, June 4, is among the rescued.——Dr. Herbert C. Allen, chief of staff, Dr. J. Hubley Schall, chief surgeon, and Dr. E. Rodney Fiske, of the Cumberland Street Hospital, Brooklyn, have handed their resignations to Charity Commissioner Bird S. Coler.——Dr. Henry Keller sailed for the Orient, June 11, with the medical unit that is being sent to Palestine.

New York Clinic for Speech Defects.—This is the first free medical clinic to be licensed by the state board of charities devoted solely to the cure of defective speech conditions. Though open only a few monthts, it has already treated more than 300 cases. It was organized to treat all forms of speech and voice disorders; to take care of teeth, mouth, and jaw conditions when such conditions are the causative factors of defective speech; to reeducate patients to overcome faulty voice or speech habits; to reeducate those who are deaf or hard of hearing. The clinic also maintains a bureau of information and a clearing house for speech and voice defects.

OHIO

Typhoid Statistics.—It is estimated by the state department of health that if the prevalence of typhoid fever in 1918 is as great as in 1917, 1,400 Ohio men of military age and at the most productive period of life will lose four weeks of working time. The department urges local health officials to support it in a vigorous campaign against typhoid.

More Tuberculosis Beds Needed.—The state department of health estimates that Ohio should raise its capacity of 1,500 tuberculosis beds to 5,000 in order to care adequately for the sufferers from tuberculosis in the state and to protect the remainder of the population from infection. The department is endeavoring to enlarge the state sanatorium at Mt. Vernon, and is urging the formation of health districts in counties which have not as yet organized.

Personal.—Dr. Austin S. McKitrick, Kenton, has been elected a trustee of the Ohio Northern University, Ada.——Dr. Charles L. Brown, Cincinnati, has been appointed city dairy and food inspector.——Dr. Joseph W. Hall, Cincinnati, has succeeeded Dr. Philip Dorger as city physician. Dr. Dorger has been city bacteriologist.——Dr. Harry M. Box has been appointed chief police and fire surgeon of Cincinnati, succeeding Dr. J. Stewart Hagen, who resigned to enter military service.——Dr. John M. Withrow has resigned as a member of the staff of the Cincinnati General Hospital, after eighteen years of continuous service.——Dr. Mark A. Brown has been appointed clinical professor of medicine in the University of Cincinnati.

PENNSYLVANIA

Personal.—Dr. John T. Dougherty, Hudson, suffered a fracture of the leg when his automobile went over an embankment, May 21.

Women Graduated.—A class of eight was graduated by the Women's Medical College of Pennsylvania, Philadelphia, June 5. The principal address was delivered by the Rev. Anna Howard Shaw of New York City.

Solarium Transferred.—The exercises attending the transfer of the new solarium for tubercular children of Ashland and vicinity to the state, were held June 5, at Ashland. The solarium is the gift of Mrs. Caroline Lind of Brooklyn. Dr. Jonathan C. Biddle, superintendent and chief surgeon of the Fountain Springs State Hospital, was in charge of the exercises.

Thirty Dispensaries to Be Opened.—Arrangements have been made by the state health department for the opening of a genito-urinary dispensary at Harrisburg. The dispensary will be in the rooms of the tuberculosis dispensary conducted by the state. This dispensary is one of thirty to be opened in various parts of the commonwealth by the health authorities. They are organized for a three-fold purpose: the relief of the physician from the almost compulsory burden of caring for the numerous charity patients suffering from venereal diseases; the prompt and efficient care of such patients free of charge who otherwise would neglect their condition with serious results, and, the betterment of the general health of the community by diminishing and, if possible, eliminating the menace of transmission of the seriously infectious venereal diseases by reaching all such cases and rendering them innocuous as rapidly as possible. The dispensaries were planned by the late Dr. Samuel G. Dixon, months before his death.

Philadelphia

Portrait Presented to Academy.—Through the generosity of Edward H. Coates, for many years president of the Pennsylvania Academy of Fine Arts, the permanent art collection has been enriched by a portrait of the late Dr. S. Weir Mitchell, who for many years was president of the academy.

Infant Mortality High.—The Child Federation has been investigating the problem of its child mortality, which is now higher than in any other city of the United States with one exception. The investigations show that in the poorer sections, the salaries of a year ago are being stretched over the greater demands of today with the result of crowded housing conditions, poor and insufficient food, and inadequate sanitation.

College of Physicians Meets.—At the stated meeting of the College of Physicians of Philadelphia, June 5, papers were read by Lieut.-Col. Pearce Bailey, M. C., N. A., on "Neuropsychiatry in the Army"; by Major Robert M. Yerkes, San. C., N. A., on "Psychological Examinations in the Army"; by Major Charles Bagley, Jr., M. R. C., U. S. Army, on "Neuro-surgical Lessons of the War." The discussion on these papers was opened by Major Stewart Paton, M. R. C., U. S. Army.

Personal.—Dr. Elmer H. Funk has been appointed medical director of Jefferson Medical Hospital to succeed Dr. Henry K. Mohler, who recently resigned to join the Jefferson Base Hospital Unit No. 38. To assume this position, Dr. Funk has resigned as a member of the tuberculosis examining board at Camp Dix.——Dr. Malcolm MacFarlan was knocked down by an automobile, June 14, while crossing Market Street and was taken to the Hahnemann Hospital, where he was found to be suffering from slight internal injuries.

TEXAS

Medical Colleges Merge.—The Fort Worth School of Medicine, medical department of the Texas Christian University, is reported to have merged with the Baylor University College of Medicine at Dallas.

VIRGINIA

New Officers.—At the annual meeting of the Norfolk Medical Society, June 3, Health Commissioner Powhatan S. Schenck was elected president, Dr. Southgate Leigh, vice president, and Dr. Dandridge P. West, Norfolk, secretary-treasurer.

Hospital Notes.—The state orthopedic hospital, which has been offered by the Medical College of Virginia to the state board of health, has been accepted by the board and will be conducted at the Medical College of Virginia and operated in connection with the Memorial Hospital until suitable buildings can be erected.

Personal.—Drs. Lawrence Ingram and Thomas L. Driscoll have been appointed members of the staff of district physicians of Richmond by the administrative board.——Dr. B. L. Phillips, Richmond, has reconsidered his resignation and consented to continue to serve as a member of the staff of the district physicians until the end of his present term.——Dr. Richard W. Garnett, health officer of Fauquier County, has accepted a position with the state board of health and will have charge of medical inspection and of the control of contagious diseases.——Dr. William T. Graham, Richmond, has been appointed head of the state orthopedic hospital.

New State Board of Examiners.—The following members of the state board of medical examiners have been commissioned for a term of four years: first district, Dr. John H. Ayers, Accomac; second district, Dr. P. St. Louis Moncure, Norfolk; third district, Dr. Junius E. Warinner, Richmond; fourth district, Dr. J. Bolling Jones, Petersburg; fifth district, Dr. Richard S. Martin, Stuart; sixth district, Dr. John W. Preston, Roanoke; seventh district, Dr. Philip W. Boyd, Winchester; eighth district, Dr. Samuel W. Maphis, Warrenton; ninth district, Dr. William W. Chaffin, Pulaski; tenth district, Dr. Robert Glasgow, Lexington. Dr. J. Leonard Jennings, Danville, was named as homeopathic member of the board and Dr. E. H. Shackleford, Richmond, as osteopathic member.

CANADA

Miscellaneous.—The government of Saskatchewan is to make a medical inspection of all defective children in that province.——Western University, London, Ont., has fallen into line in admitting women students to the study of medicine in that institution.

Personal.—Col. Alexander Primrose, Toronto, has been made a Companion of the Bath.——Col. George E. Armstrong, Montreal, has been made a Companion of the Order of St. Michael and St. George.——Dr. George Badgerow, formerly of Toronto, but for several years a practitioner in London, England, has been made a C. M. G.

Research at Toronto and McGill Universities.—A donation of $2,000,000 has been promised to the University of Toronto for research work, and the governors are considering the acceptance of the gift. Prof. A. B. Macallum, chairman of the scientific and industrial research council of Canada, recently gave it as his opinion that research science faculties should at once be established at McGill and Toronto universities.

GENERAL

Bequests and Donations.—The following bequests and donations have recently been announced:

To the Medico-Chirurgical Faculty of Maryland, his medical library, by the will of Dr. Henry M. Wilson, Baltimore.

American Theatrical and Hospital Association, $6,000, by the annual benefit at the Auditorium Theater, Chicago, June 9.

Goshen (Ind.) Hospital, $5,000, by the will of Hannah B. Walker.

Ossining Hospital, Ossining, N. Y., $1,000, by the will of Mrs. Julia Geer Simmons.

Catholic Hospital Association Meeting.—The third annual convention of the Catholic Hospital Association was held, June 18, 19 and 20, at St. Francis Xavier's Academy, Chicago. The program included several addresses bearing on the standardization of hospitals. The Rev. Charles B. Moulinier, S.J., regent of the Marquette University School of Medicine, Milwaukee, is president of the association.

National Tuberculosis Association Meeting.—The fourteenth annual meeting of the National Tuberculosis Association was held in Boston from June 6 to 8, under the presidency of Dr. Charles L. Minor, Asheville, N. C. The following officers were elected: President, Dr. David R. Lyman, Wallingford, Conn.; honorary vice president, Col. George E. Bushnell, M. C., U. S. Army; vice presidents, Drs. Lawrason Brown, Saranac Lake, N. Y., and Lee K. Frankel, New York City; secretary, Dr. Henry Barton Jacobs, Baltimore; treasurer, Dr. William H. Baldwin, Washington, D. C.; executive committee, William T. Parsons, Washington, D. C., and Drs. Orville W. McMichael, Chicago; Charles L. Minor, Asheville, N. C.; Hoyt E. Dearholt, Milwaukee; Fred A. Hoffman, Newark, N. J., and Edwin R. Baldwin, Saranac Lake, N. Y.; directors, Mrs. F. C. Hodgston, Atlanta, Ga.; George F. Canfield, New York City; Col. Frank Billings, M. C., N. A., Chicago; Dr. Alfred Henry, Indianapolis; Bolton Smith, Memphis, Tenn.; Col. George E. Bushnell, M. C., U. S. Army, Washington, D. C.; Miss Agnes Randolph, Richmond, Va.; Dr. Alfred Meyer, New York City; W. Frank Persons, Col. A. M. Foster, New Haven, Conn.; Isaac Adler, Rochester, N. Y.; Thomas McCrae and Dr. W. Jarvis Barlow, Los Angeles, Calif. The association adopted resolutions deploring the retirement of Surgeon-General Gorgas, and requested that he be continued in active service in his present position, so that neither his work nor his plans may be interrupted.

Training School for Mental Hygiene Workers.—It is announced from the New York headquarters of the National Committee for Mental Hygiene that a war emergency course will be given at Smith College, Northampton, Mass., to prepare workers to assist in reclaiming soldiers suffering from nervous and mental diseases. There is a large number of these maladies in the present war, as has been found in the experience of foreign countries as well as in our own Army. In the treatment of these soldiers, civilian aides as well as medical specialists are required, and it is for the training of these aides that the course is provided. It will be given also at the Boston Psychopathic Hospital through a subcommittee consisting of Drs. E. E. Southard, Boston; William L. Russell, L. Pierce Clark of New York, Walter E. Fernald Waverly, Mass., and William A. Neilson, Ph.D., president of Smith College. The work is to be under the immediate direction of Miss Mary C. Jarrett, chief of social service at the Boston Psychopathic Hospital. The course will continue for more than eight months and will be open to college graduates and other young women who have had an equivalent of technical training. The academic portion of the instruction will be given at Smith College from July 8 to August 31, to be followed by six months' practice work at various centers where there are opportunities for social work with psychiatric cases under the direction of trained social workers. Many eminent psychiatrists, psychologists and sociologists will be among the lecturers in the course.

FOREIGN

Medical Society Organized at Athens.—We are informed from Greece that a medico-surgical society has been organized at Athens, the purpose of which in part is to inform the profession in other countries of what is being done in the medical sciences in Greece. It seems to be the plan to send out carbon copies of the typewritten transactions, in French, to a few leading medical journals in other lands. Dr. N. Alivisato is president and Dr. A. Portocalis, Rue Canaris 11, Athens, is secretary.

National Information Bureau in France.—The French authorities have organized a special service for the purpose of disseminating information on various questions, particularly connected with the war, and it has distributed millions of educational pamphlets and circulars in the last year or two. The headquarters are at rue François Ier 3, Paris, which is also the headquarters of the Union contre la Propagande ennemie. The National Paper Commission has also been organized, which has lightened the burdens of the periodical press, and the National Press Commission is also simplifying matters. The medical press is not represented in this Office national de la Presse, and the Association de la Presse médicale has recently petitioned the government to permit it to be represented in the commission, citing various reasons why this should be done.

SOUTH AND CENTRAL AMERICA, MEXICO AND WEST INDIES

Argentine Medical Association Organizes an Honor Court.—The *Semana Medica* states that at the recent annual meeting of the Asociacion Medica Argentina at Buenos Aires, a *tribunal de honor* was organized, and Drs. J. Mendez, A. M. Centeno, E. Zarate, D. J. Cranwell and I. Allende were appointed as the executive board.

Twenty-Fifth Anniversary of the Gaceta Medica de Caracas.—As this journal is the official organ of the National Academy of Medicine of Venezuela, the twenty-fifth anniversary of its establishment was celebrated by a special historical meeting of the academy, although the academy itself was not organized until 1904. The evolution of medicine in Venezuela was reviewed by the first president of the local medical society, Dr. F. A. Risquez, and the history of the *Gaceta* was told by Dr. L. Razetti, the only director of the *Gaceta* since its foundation, who is also permanent secretary of the academy.

The Alcohol Question in Chile.—The *Semana Medica* reproduces a letter recently received from the secretary of the Liga Nacional contra el Alcoholismo of Santiago, Chile, Dr. C. F. Peña. He relates that last December an official committee was appointed by the authorities to study ways and means to reduce the consumption of alcohol. One of the first steps was to publish a series of articles which the lay press is publishing, not only to educate the public regarding the evils of acohol, but also to convince the liquor manufacturers that it would be to their own pecuniary interest to restrict materially their output of spirituous beverages. The higher prices they would receive from restricted output would more than counterbalance the loss in quantity. The lay press has taken up the matter with energy, supplementing the league's articles with editorials. Peña urges the anti-alcohol forces in Argentina to have his league's articles or their equivalent reproduced in the Argentine lay press, as he thinks that this measure of restricted production and higher prices solves the problem of alcohol by harmonizing private interests with public health interests. He adds that concerted action in neighboring countries would strengthen the movement materially.

BUENOS AIRES LETTER

Buenos Aires, May 6, 1918.

Medical School at La Plata

The executive board of the University of La Plata, on the initiative of the rector of the university, Dr. R. Rivarola, has voted to organize a preparatory school for the medical sciences, corresponding to the first three years of the medical curriculum at the University of Buenos Aires. The principal reason for the foundation of this medical school is the overwhelming number of students of these first years at Buenos Aires. There are more than 3,000 students enrolled at Buenos Aires in the medical and dental departments and in the departments for pharmacy and obstetrics. The cities of Buenos Aires and La Plata are only 60 kilometers (37 miles) apart. The new school will start the first two year courses in 1919, and the third year will be added in 1920.

Strike of Students at Cordoba

There has long been a movement under way for the reform of the statutes of the University of Cordoba, in northern Argentina, but any change has been opposed by the executive board of the university. The officers of the various faculties form the board, and their positions are for life. This system of administration was modified some time ago in the other state university, the one at Buenos Aires. On account of some of the measures imposed by the board of the University of Cordoba, there has recently been a strike on the part of the students, which compelled the intervention of the national authorities. Dr. Matienzo was appointed arbitrator, and he has made his report to the government, and the decision of the latter is now awaited. All the medical schools of Argentina (Buenos Aires and Cordoba) are state institutions. No schools of the kind can exist except those belonging to the state, according to the laws of the country.

Campaign Against Malaria

The president of the Public Health Service has gone to the northern part of the country to reorganize the antimalaria service for more effectual work. On account of the enormous size of the area affected and the scanty population, as well as the funds available, it will be necessary to limit to certain selected points the measures to be applied.

Official Organ of the Academy of Medicine

When the Academia de Medicina of Buenos Aires was founded in 1822, a bulletin was issued the following year, entitled the *Anales de la Academia de Medicina*, but it was not long lived. The bulletin has been now revived, and the first number of the first volume has appeared. The leading article is Ayerza's report on endemic regional arsenic poisoning [from the drinking water. The region affected is the Bell Ville district. This endemic chronic poisoning was described in The Journal, Feb. 16, 1918, p. 496.]

Alcoholism and Mental Disease

The official report of the state insane asylum, covering a period of twenty-seven years to date, reveals that among the 28,035 patients during that period alcohol was responsible for the insanity in 39.6 per cent.

New Chief of Public Health Service

The national executive has appointed Prof. Dr. G. Araoz Alfaro president of the Departamento Nacional de Higiene. Dr. Alfaro has ratified the appointments of all the personnel of the service, and intends to reorganize the department. Among his chief efforts figures the organization of an active campaign against pulmonary tuberculosis, with permanent institutions to aid in combating it. New hospitals, sanatoriums and dispensaries are to be created. The government plans a tax on the Lottery which it is expected will bring in about four millions annually.

Death of Dr. B. Sommer

Dr. B. Sommer died April 11, two years after he had completed twenty-five years' service as professor of dermatology in the medical school of the University of Buenos Aires. He was the founder of this chair in 1892.

Elections in the Medical Societies

The annual elections have recently been held in the principal medical societies of Buenos Aires. In the Asociacion Medica Argentina Dr. C. Robertson was elected president, Dr. J. Saralegui secretary, and Dr. P. Hardoy, director of the

Revista, published by the association. In the Sociedad de Cirugia, Dr. M. Castro was elected president and Dr. M. Antelo, director of the *Revista*. In the Sociedad de Higiene, Microbiologia y Patologia, Dr. J. E. Penna was appointed president.

LONDON LETTER

LONDON, May 22, 1918.

Interallied Conference on Disabled Fighting Men

The Duke of Connaught has opened the Interallied Conference on Disabled Fighting Men in the Central Hall, Westminster. The object is to discuss the after-care of discharged sailors and soldiers. Nearly 100 British representatives attended. The other countries represented were Australia, Belgium, Canada, France, India, Italy, New Zealand, Portugal, Serbia, South Africa and the United States. Speaking in French, the duke welcomed those present on behalf of the king and the government of Great Britain. "It is just a year ago," he said, "that the first Allied Conference, called by the French and Belgium governments, met in Paris and laid the foundation of these meetings, resulting in the formation of a permanent committee with a research bureau and museum in Paris. The first number of the *Inter-Allied Review on the After-Care of Disabled Men* has just appeared, and in its pages will be found from time to time all the latest developments of science in the great cause which we all have so much at heart, namely, the healing of wounds and the reestablishing in civil life of men maimed and disabled by war. As our armies are united in the field against the common foe to uphold liberty and justice against invasion and oppression, so are we all united here today to bring to light and to discuss all that is new and all that is scientifically possible to alleviate the sufferings and heal the wounds of the brave and gallant men who side by side have fought and shed their blood for home and country in this great war. I am happy and proud to welcome here today delegates from all our great Allies and neighbors, whose armies are now fighting shoulder to shoulder with our men in the terrible struggle only some hundred miles away—delegates from France (among whom I am pleased again to see Dr. Bourrillon, president of the Permanent Committee in Paris), Italy, Belgium, United States, Portugal, Serbia, and Siam, and from our gallant Dominions of Canada, Australia, South Africa, New Zealand, India, Newfoundland, and other parts of the British Empire." In connection with the conference there is an exhibition of the various kinds of apparatus used by the disabled and at which they perform such operations as basket making and boot repairing. This was visited by the king and queen, who took great interest in the work and chatted with representatives of foreign countries, frequently in their own language.

The Medical Service of the Navy

In this war the navy has been called the silent service, not because of any want of recognition of the fact that its work is all-important, but because the circumstances have rendered it necessary that secrecy should be maintained as to most of its operations. Hence while much has been heard of the work of the Army Medical Service, little is heard of the Naval Medical Service. Yet it could furnish a wonderful record of preparation and foresight and work performed without a hitch on the two most important occasions when it was put to the test—the battles of Jutland and Zeebrugge. Several new formations have been created under war experience, such as the Naval Medical Transport Unit, the Naval Massage Corps, and the Naval Voluntary Aid Detachment. In July, 1914, the number of medical officers serving was 520; at the present time the number is 1,378, in addition to surgeon-probationers and dentists. There are fifty-nine dental surgeons holding commissioned rank in the Royal Naval Volunteer Reserve, and serving with the fleet at sea, and 218 surgeon-probationers with the relative rank of sublieutenants. The nursing sisters at home and abroad number in all 252. Of the new services, the special unit to deal with the transport of sick and wounded from the fleet is numerically the most important. It consists of thirty medical officers and 500 ratings, with a civilian voluntary personnel consisting of the voluntary aid detachments and bearer parties of approximately 1,200 men, all exempt from military service. There are five regular service ambulance trains, and in addition there is a voluntary aid detachment train always ready for service at Glasgow. There are more than 100 motor ambulances. In Scotland and on the east coast of England are mobile parties which can be sent at short notice from place to place. Nine qualified masseurs or masseuses are attached to each large naval hospital, and recently 104 women members of the voluntary aid detachment have been enrolled for service with the navy and are employed only in hospitals. The great naval hospitals at Haslar, Plymouth and Chatham have accommodations for 3,556 patients, and in the United Kingdom there is accommodation for approximately 10,000 men. In addition there are hospitals at Hong Kong, Bermuda, Simonstown, Malta and Gibraltar, the last two named providing accommodations for 1,450 patients. Since the outbreak of war the health of the navy has been remarkably good, and, in fact, is probably better than in the years preceding the war. There are eleven hospital ships working between the fleet and the shore hospitals. Though the number of naval medical officers killed in action is small in comparison with the Army Medical Corps, a heavy toll has been taken when the comparatively small size of the force is considered. The number of naval medical officers killed or drowned in action to the present date is eighty-three, while nineteen have died in service.

The Epidemic of Acute Encephalitis

The epidemic of acute encephalitis (described in my last two letters) still continues. The various names that have been applied to the condition—acute infective ophthalmoplegia, acute encephalitis myelitis, botulism, etc.—show that considerable doubt prevails as to its nature. Investigations by the local government in collaboration with health officers and physicians continue. The earliest case is reported to have had its onset January 28, and there were two having onset in the week beginning February 10, and two in the last week of that month. In consecutive weeks in March, 7, 3, 10 and 14 cases came to notice; and in April and the first week of May the corresponding numbers were 11, 19, 14, 16 and 6. The largest number of cases has been recorded in London, but groups of cases have occurred also in Sheffield and Birmingham, and single cases have been reported from many other parts of England and Wales. The cases occurred among persons having the most varied occupations. No group of cases was associated with a single occupation. In only one instance were there two cases in the same household. The cases about equally affected the two sexes. The case mortality has approached 20 per cent. It is probable that slight cases have been overlooked. Three cases occurred in infants in the first year of life, one of them being in a breast-fed infant aged 3½ months. Five were in children from 1 to 5, and seven in children from 5 to 10. Of 105 cases of which partial reports are available, sixty-four occurred in persons over 20 years of age. The clinical records at present available relate to eighty-seven cases, but many of them are incomplete, and it is not certain that in all cases there was paralysis of the cranial nerves. The symptoms and signs recorded may be thus summarized: Among general symptoms pyrexia was present in 41 of the 87 cases, usually in the early stage of the illness; it may have been present in some other cases which were not reported on while in that stage. In eight cases it was stated that there was no fever. Of other general symptoms, headache or localized occipital, temporal or frontal pain was recorded in 31 cases. Profuse sweating was noted in 7 cases and an erythematous or other rash in 6. Various mental symptoms come next to pyrexia in order of frequency, namely, drowsiness in 29 cases, lethargy in 18, stupor in 13, asthenia in 12, coma in 9; also vertigo in 17 and delirium in 20. Absence of lethargy was recorded in 3 cases, and the presence of restlessness, irritability or sleeplessness in 5. Of symptoms referable to partial or complete paralysis of certain cranial nerves, there were recorded bilateral facial paralysis in 9, unilateral in 11; bilateral ptosis in 32 cases, unilateral in 2; ophthalmoplegia in 18, diplopia in 18, strabismus in 10, nystagmus in 9, double third nerve palsy in 6, pupillary dilatation with failure of accommodation in 2, and paralysis of the tongue in 2. Affections of speech were noted in 5 cases. Rigidity of the muscles was recorded in 10 cases, muscular tremors in 9, and twitching or jerking of certain muscles of the face or limbs in 6. Among symptoms referable to the gastro-intestinal system, obstinate constipation was recorded in 35 cases, vomiting in 10 cases, difficulty of swallowing in 9, and dryness or soreness of the throat in 3. The parotid glands were swollen in 2 cases. Retention of urine was recorded in 15 cases, and incontinence in 3. The records relating to the circulatory and respiratory systems are not sufficiently complete for useful summary at present. Although in a considerable proportion of the reported cases there was a history of the recent consumption of such foods as sausages, sardines, shrimps, lobsters, canned salmon, cheese, bacon and ham, these and other exceptional foods had not been consumed in the majority of reported cases; and no particular food has been found to be related to the outbreak. The pathologic investigation of the outbreak is being undertaken by the Medical Research Committee. The results so far obtained show no bacteriologic evidence of botulism and give no support to the association of the outbreak with infection from food. Further investigations are in progress. The view has been put forward that the epidemic is the cerebral form of acute anterior poliomyelitis, that is, poliencephalitis; but against this is the fact that there is no prevalence of the ordinary or spinal form of this complaint.

A Permanent Anthropometric Department

At a meeting of the reconstituted National Birth-Rate Commission (instituted by the National Council of Public Morals), a resolution advocating the inclusion in a ministry of health of a permanent anthropometric department was passed. Prof. Arthur Keith stated that the Anthropological Survey Committee, appointed in 1916 by a conjoint board of scientific societies, had reported that a survey was highly desirable in the national interest—the survey of adult males by the Ministry of National Service, of schoolchildren by the Board of Education, and of factory children by factory physicians working under the Home Office. An anthropometric survey is being made of soldiers of the new armies of the United States, and the committee is in communication with the American committee to secure adoption of common methods, so that their results may be comparable. It would be interesting, he said, to compare the original national (Britain) with her descendants in America. A comparison of the skulls and skeletons of ancient with modern British people shows that distinct changes have taken place and apparently are taking place, particularly in the teeth, jaws and faces of modern persons. These changes are of a degenerative nature. There is reason to believe that certain racial constituents of the people suffer from these changes more than others, and the survey should be of such a nature as to elicit the racial constituent of each district and each section of the people in that district.

PARIS LETTER

Paris, May 16, 1918.

The Commission for Radioactive Substances

By decree of the minister of armament and war materials, there has been instituted a committee to be known as the "Comité des corps radioactifs" which will take up particularly the needs of the state and private industries in respect to radioactive substances, and supervise the purchase, manufacture, import and export of such substances. One of the vice presidents of this committee is a representative of the army medical service; the civil practitioners and the radium institute are also represented. This decree is based on reports showing the increasing use of radioactive substances in war and private industries, and in military and civil hospitals. The radium industry, a product of France, should have a much greater growth and development after the war.

Gift from the American Red Cross

The American Red Cross has donated to the French Red Cross 10,000,000 francs in recognition of the valuable services rendered by the latter and to cement the friendship already existing between these two bodies. The American Red Cross has admitted to its honorary membership the Société de secours aux blessés militaires, l'Union des Femmes de France and l'Association des Dames françaises.

Epidemic Lethargic Encephalitis

March 22, Prof. Arnold Netter called the attention of the Société medicale des hôpitaux de Paris to the existence of a small epidemic of lethargic encephalitis. This affection, usually febrile in nature, makes its onset with headache and sometimes vomiting. Soon there appears somnolence, increasing in degree gradually, and nearly always an involvement of the muscles of the eyes. Lumbar puncture is negative, bacteriologically and otherwise. Since then other physicians in Paris have seen similar cases, and they have also appeared in England in London, Sheffield and Manchester (epidemic in ·por). The characteristic symptoms in connection with repr eye include ptosis of the eyelid, strabismus, immobility meas eyeball and nystagmus. The internal eye muscles are the pr volved so often, although there may be paralysis of public l dation, a slowness of the iris to react to light. The neighbori nnervated by the facial nerve, those of the tongue, materially nx and of the extremities, may participate in the paralysis. Tremor is not exceptional. The typical symptoms of meningitis, Kernig's sign, stiffness of the muscles and irregular pulse, are absent or present only in mild degree. The disease is grave. Death or a cure may take place in a few days. Usually the disease is prolonged for weeks or months. During the convalescence the persistence of muscle fatigue and eye disturbances is noted for a long time. Netter is of the opinion that this disease is similar to that mysterious epidemic which was observed in Italy in 1890 and known as "nona" and whch was characterized by a lethargy which often proved fatal.

Signs of Death

The usual procedure employed at the front to determine that death has actually occurred is to inject fluorescein according to the method of Dr. S. Icard of Marseille. In the living the eye will take on a peculiar green color, as though a large emerald had been set in the orbit. If there is no such coloration to be noted one or two hours after this injection, it may be stated positively that the person is dead. Another positive sign is the acid reaction of the spleen tissue (Ambard and Brissemorel). Dr. Terson of Paris has called attention to eye signs indicative of death which are obtained by acting on the external circulation of the eye. Hàlluin recommended the instillation of ether, which produces rubefaction in the living eye; but this is sometimes very dangerous for the cornea. It is better to produce a reaction by mechanical means, by scarification, cauterizing the conjunctiva of the eyeball or of the eyelids, chemically by means of copper sulphate or by conjunctival injections of sodium chlorid solution. These procedures are not dangerous; if redness is not produced thereby it signifies that there is no circulation. Terson has experimented with the use of ethyl-morphin hydrochlorid powder (dionin), which produces intense vasodilatation in the living, with chemosis, and yet without any danger to the eye. He is of the opinion that if the result of these various methods is negative, two hours after the supposed death, there is no danger of premature burial.

Sanitation of Dugouts

The Société de médecine publique et de génie sanitaire recently discussed this subject at some length. The results of this discussion may be summarized as follows: The making of airholes in these dugouts or shelters has never caused any special inconvenience, hence openings should be made in the masonry recently built to prevent the entrance of asphyxiating gases. These openings should, however, allow air to enter so that the shelters will be ventilated sufficiently. The number of men to be admitted to these shelters and the cubic feet of air space which they should have should be computed at not less than 4 cubic meters of air space for each person. After each alarm these dugouts must be ventilated as much as possible by opening wide the entrances. They should be cleaned and disinfected at regular intervals; all shelters should be taken care of in this way; milk of lime (suspension of calcium hydroxid) seems to be the best available agent for this purpose. All persons suffering with infectious diseases should be isolated as much as possible from the other individuals who have sought refuge in the same shelter. The society called the attention of the authorities to the most efficacious means of avoiding the accidents resulting from the ignition of gas freed by a broken conduit or the invasion of the shelters by gas.

For the Blinded Soldiers

Acting on the suggestion of Mr. Georges Kessler, president of the Fonds permanent d'assistance aux aveugles de guerre britanniques, français et belges, Mr. J. Seligman recently placed at the disposal of the blinded soldiers of the allied armies the château de Madrid with 160 rooms, situated near Paris on the confines of the Bois de Boulogne. Mr. Seligman has set apart for this service an annual income of 75,000 francs with the sole proviso that American soldiers are to be received and cared for at the château in the same way as the British, French and Belgian soldiers. The château is given for this purpose for a term of three years.

The Legion of Honor

Dr. Alexis Carrel of New York has been made a commander of the Légion d'honneur, and Dr. G. Lafayette Foster, director of the Canadian Army Medical Service an officer.

Personal

May 21, the Académie de médecine elected Dr. Siredey of Paris to membership in the section on pathologic anatomy.

Dr. Vaillard, medical inspector general (retired) has been made a member of the Conseil supérieur d'hygiène publique de France, vice Dr. Mosny, deceased.

Deaths

John Harper Long, professor of chemistry at the Northwestern University Medical School and member of the Council on Pharmacy and Chemistry, died at his home in Evanston, Ill., June 14, after an illness of over six months. Professor Long was born near Steubenville, Ohio, in December, 1856. He was graduated from the University of Kansas in 1877, and later studied at Tübingen, Germany, receiving the degree of doctor of science in 1879. He was appointed professor of chemistry in the medical school of Northwestern University in 1881. Professor Long was a member of the referee board of consulting scientific experts of the United States Department of Agriculture.

He was a chemist of the state board of health and of the sanitary district of Chicago. He served as president of the American Chemical Society in 1903, of the American Association for the Advancement of Science in 1903 and of the Institute of Medicine of Chicago in 1917. Professor Long was a member of the United States Pharmacopoeia Revision Committee, and from the time of its organization until his death a member of the Council on Pharmacy and Chemistry. During 1913-17 he was dean of the school of pharmacy of Northwestern University.

Professor Long did much chemical research work, particularly in the branches of physiologic chemistry closely related to medicine. As a member of the Council on Pharmacy and Chemistry he not only gave much time to the routine work, but in addition carried out many original investigations.

Professor Long leaves, besides his widow, Catherine S. Long, four sons—Albert, Esmond, Lother, Captain, United States Marine Corps in France, and Byron, Lieutenant, United States Army—and one daughter, Ariel, wife of Lieut. E. P. Miller of Washington, D. C.

PROF. JOHN H. LONG,
Member of the Council on Pharmacy and Chemistry

Arthur Washington De Roaldes, New Orleans; Tulane University, New Orleans, 1870; aged 69; formerly a Fellow of the American Medical Association; fellow of the American Laryngological Association and president in 1916-1917; a member of the American Otological Society; emeritus professor of diseases of the eye, ear, nose and throat in the New Orleans Polyclinic; assistant surgeon of the Sixth International Ambulance Corps during the Franco-German War; founder, trustee and surgeon-in-chief of the Eye, Ear, Nose and Throat Hospital, New Orleans; commander of the Legion of Honor in France; commander of the Order of St. Gregory the Great and knight of the Order of Saints Maurice and Lazare; died at his home in New Orleans, June 13.

Seth Delmar Dice, Hollywood, Calif.; New York University, New York City, 1897; Cornell University, New York City, 1899; aged 46; formerly a Fellow of the American Medical Association; who contracted tuberculosis while an intern in Bellevue Hospital, and after an arrest of the infection was again attacked in 1906, and had been ill since that time with pneumothorax, pneumonia, and empyema, for which four ribs were resected in 1915; died in Los Angeles, May 22, from amyloid degeneration of the liver and kidney.

George Winfield Foster, Stevenson, Ala; Vanderbilt University, Nashville, Tenn., 1892; aged 61; a Fellow of the American Medical Association; and Association of Surgeons of Southern Railways, and president of the Jackson County Medical Society; local surgeon for the Nashville, Chattanooga and St. Louis, and Southern railroads; died at his home, March 11, from meningitis following mastoiditis.

Benjamin E. Miller, Albion, Ind.; Cincinnati College of Medicine and Surgery, 1871; aged 72; formerly a Fellow of the American Medical Association; a member of the Indiana State Medical Association; and treasurer of the Noble County Medical Society; a veteran of the Civil War; for twenty-two years a pharmacist, and for many years health officer of Albion and Noble County; died at his home, May 31, from valvular heart disease.

U. Sim Grant Deaton, Toledo, Ohio; Memphis Hospital Medical College, Memphis, Tenn., 1894; aged 50; a member of the Ohio State Medical Association; a member of the House of Representatives and state senator from Lucas County; captain and assistant surgeon in the Spanish-American War, with service in Cuba, China, and the Philippine Islands; died in Robinwood Hospital, Toledo, May 31, from appendicitis.

John Hillman Bennett, Pawtucket, R. I.; Boston University, 1891; aged 48; a member of the Rhode Island Medical Society, and for several terms president; for many years a member of the State Board of Health, and at the time of his death president; and health officer of Pawtucket; died at his home, June 4, from aneurysm of the aorta.

William Seth Watson, Sacramento, Calif.; Bellevue Hospital Medical College, 1870; aged 67; formerly a Fellow of the American Medical Association and American Electro-Therapeutic Association; medical director of the Institute for Nervous and Mental Disease, Fishkill-on-Hudson, N. Y., and mayor of Fishkill; for nine years a resident of California; died at his home, May 26.

Lieut. Thomas Hart Raines, M. R. C., U. S. Army, Savannah, Ga.; Medical College of Georgia, Augusta, 1900; aged 39; formerly psychiatrist in the Westchester County Penitentiary, East View, N. Y.; and local medical examiner for the Atlantic Coast Line District; on duty as psychiatrist at the Base Hospital, Fort Riley, Kan.; died at that institution, May 24.

Robert R. Hopkins, Richmond, Ind.; Cincinnati College of Medicine and Surgery, 1868; aged 73; a member of the Indiana State Medical Association; surgeon of United States Volunteers during the Civil War; for two years superintendent of an asylum near Cincinnati; an expert on medical jurisprudence; died at his home, May 30.

Robert Day William, Trafalgar, Ind.; Miami Medical College, Cincinnati, 1868; Bellevue Hospital Medical College, 1879; aged 75; a member of the Indiana State Medical Association and once president of the Johnson County Medical Society; a veteran of the Civil War; died at his home, June 3.

Lieut. Tony Edward Hunter, M. R. C., U. S. Army, Versailles, Ind.; Kentucky University School of Medicine, 1904; aged 39; formerly a Fellow of the American Medical Association; a member of the Indiana State Medical Association; died in Hattiesburg, Miss., April 18, from pneumonia.

William Bacon McGill, Lancaster, Calif.; University of Pennsylvania, Philadelphia, 1889; aged 59; a member of the Medical Society of the State of Pennsylvania; district surgeon for the Southern Pacific System; died at his home, March 19, from septicemia following erysipelas.

Albert Jeremiah Elliott, San Diego, Calif.; University of Michigan Homeopathic Medical School, Ann Arbor, 1897; aged 45; formerly a Fellow of the American Medical Association; died in St. Joseph's Hospital, San Diego, May 23, a day after a surgical operation.

Henry B. McKenzie, Enid, Okla.; Medical Department of the University of Tennessee, Nashville, 1887; aged 65; a member of the Oklahoma State Medical Association, and president of the Garfield County Medical Society; formerly health officer of Enid; died at his home, April 23, from pneumonia.

Gaines Worley, St. Augustine, Fla.; Chattanooga (Tenn.) Medical College, 1900; aged 42; a Fellow of the American Medical Association; surgeon of the Florida East Coast Railroad Hospital, St. Augustine; died in Johns Hopkins Hospital, Baltimore, May 30.

William Lockwood Parker, Baker, Ore.; University of Oregon, Portland, 1896; aged 48; formerly a Fellow of the American Medical Association; a member of the Oregon State Medical Association; died in the Good Samaritan Hospital, Portland, May 31.

Gabriel F. Foster, Memphis, Mo.; Long Island College Hospital, Brooklyn, 1868; aged 80; formerly a Fellow of the American Medical Association; a member of the Missouri State Medical Association; died at his home, April 18, from cerebral hemorrhage.

Ethelbert Eldridge Meek, Regina, Sask.; Manitoba Medical College, Winnipeg, 1901; aged 40; medical officer of the sixty-eighth battalion and for two years on duty in France; died from wounds, in a Canadian Hospital at Boulogne, France, June 2.

Jaroslav Radda, New York City; University of Maryland, Baltimore, 1908; Fordham University, New York City, 1909; aged 45; a Fellow of the American Medical Association and American Urological Association; died at his home, June 5.

James Henry Tobin, Pittsfield, Mass.; Albany (N. Y.) Medical College, 1890; aged 50; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of New York; died at his home, June 6.

William Thomas Bruce, Lebanon, Pa.; Hahnemann Medical College, Philadelphia, 1876; aged 72; for several terms a member of the City Council, local board of health and board of education; died at his home, June 1, from uremia.

Joseph Hervy Buchanan, North Plainfield, N. J.; Jefferson Medical College, 1896; aged 46; a Fellow of the American Medical Association; clinical assistant in the Muhlenburg Hospital, Plainfield; died at his home, June 7.

Lieut. Charles Richard Long, M. R. C., U. S. Army, Sedalia, Mo.; National University of Arts and Sciences, St. Louis, 1916; a member of the Missouri State Medical Association; was killed in battle in France, early in April.

Samuel A. S. Jessop, Kittanning, Pa.; Jefferson Medical College, 1879; aged 61; a member of the Medical Society of the State of Pennsylvania; died at the home of his brother in Kittanning, June 2.

Joseph Henry Mattingly, Johnstown, Ohio; Medical College of Ohio, Cincinnati, 1885; aged 58; formerly a member of the Ohio State Medical Association; died at his home, June 4, from arteriosclerosis.

James Cook Benson, Camden, Ala.; University of Alabama, Mobile, 1887; aged 50; a member of the Medical Association of the State of Alabama; died at the Burwell Infirmary, Selma, June 1.

William J. Robinson, Lapeer, Mich.; Michigan College of Medicine, Detroit, 1881; aged 64; a Fellow of the American Medical Association; died at his home, May 31, from septicemia.

Paul D. Carpenter, Pittsford, N. Y.; Jefferson Medical College, 1867; aged 52; a Fellow of the American Medical Association; died at his home, June 4, from peritonitis.

John Henry Hinchman, Richmond, Va.; Medical College of Virginia, Richmond, 1879; formerly a member of the Medical Society of Virginia; died at his home, about May 31.

Don Leroy Talcott, Crofton, Neb.; State University of Iowa, Iowa City, 1904; a member of the Nebraska State Medical Association; died at his home, May 26.

William S. Purkhiser, Moscow, Ohio; Eclectic Medical Institute, Cincinnati, 1898; aged 53; for several terms coroner of Clermont County; died at his home, June 4.

Watson F. Quinby, Wilmington, Del.; Jefferson Medical College, 1847; aged 93; one of the original experimenters with aircraft; died at his home, May 26.

Aurelia Springer, Lewiston, Maine; New England Female Medical College, Boston, 1872; aged 82; died in the Maine General Hospital, Lewiston, June 3.

Frank Oakley Stockton, East Orange, N. J.; College of Physicians and Surgeons in the City of New York, 1881; aged 58; died at his home, May 27.

Joseph W. Binckley, Canton, Ohio; Cleveland University of Medicine and Surgery, 1867; aged 80; formerly mayor of Canton; died at his home, June 1.

Warren Lee Hummer, Greenfield, Iowa; University of Nebraska, Omaha, 1904; aged 43; died in a hospital in Omaha, May 28, from nephritis.

James J. Choate, Los Angeles; Washington University, St. Louis, 1879; died about June 1, from heart disease, while making a professional call.

Archibald W. Rhea, Seattle; (license, Washington, 1896); a practitioner since 1860; aged 76; died at the home of his son in Tacoma, May 21.

Orville Juan Perkins, Chicago; Bellevue Hospital Medical College, 1878; aged 68; died at his home, June 14, from valvular heart disease.

Jesse Braman, Wadhams, N. Y.; University of Vermont, Burlington, 1884; aged 64; died at his home, May 28, from cancer of the rectum.

Lewis Robert McFarland, Transfer, Pa.; Eclectic Medical Institute, Cincinnati, 1883; aged 68; died at his home, May 15, from diabetes.

George E. White, Nashville, Tenn.; (license, Tennessee, 1911); aged 41; died at his home, April 23, from traumatic lobar pneumonia.

John K. Stone, Arlington, Texas; Texas Medical College and Hospital, Galveston, 1877; aged 65; died at his home, May 27.

Robert A. McKinney, Lagrange, Texas; University of Pennsylvania, Philadelphia, 1870; aged 73; died at his home, May 30.

Merton Reynolds Streeter, Oshkosh, Wis.; Rush Medical College, 1889; aged 52; died at his home, May 28, from nephritis.

Uriah Irvin Ward, Wichita, Kan.; University of Wooster, Cleveland, 1865; aged 80; died in the Masonic Home, Wichita, May 19.

Alexander Hitchcock, Port Clinton, Ohio; University of Wooster, Cleveland, 1872; aged 70; died at his home, May 27.

Elwood Holaday, West Elkton, Ohio; Pulte Medical College, Cincinnati, 1886; aged 64; died at his home, May 31.

Evan Edmiston Gwynne, Chicago; Hahnemann Medical College, Chicago, 1879; died at his home, about June 5.

Edwin Charles Loomis, Perrysville, Ind.; (License, Indiana, 1898); aged 72; died at his home, May 27.

Leon M. Rosenson, Brooklyn; University of Kharkov, Russia, 1887; aged 54; died at his home, June 3.

Marriages

Capt. Ralph Thomas Knight, M. R. C., U. S. Army, Minneapolis, on duty with the Mobile Surgical Operating Unit, Allentown, Pa., to Miss Phoebe Clara Hill, of Lincoln, Neb., at Mount Vernon, N. Y., June 4.

Lieut. Clayton James Hyslop, Chicago, on duty at Camp Wheeler, Macon, Ga., to Miss Edna Forsythe, Galesburg, Ill., at Macon, Ga., June 8.

Lieut. Robert Jay Cook, M. R. C., U. S. Army, Boston, to Miss Edith M. Valet, at Chickamauga Park, Ga., June 3.

Lieut. Edwin Franklin Syrop, M. R. C., U. S. Army, Baltimore, to Miss Rena Fleischman, recently.

William Wilson Meriwether, Montgomery, Ala., to Miss Mattie D. Hudson, of Macon, Ga., June 19.

Louis Bernard Samaine, Mulliken, Mich., to Miss Dorthia Nichols, of Charlotte, Mich., May 27.

David Wolin, Rochester, N. Y., to Miss Lillian Feinbloom, of Poughkeepsie, N. Y., May 6.

Ralph Leroy Thompson, to Mrs. Elizabeth S. Schuyler, both of St. Louis, May 28.

Charles Wendell Garey, to Miss Margaret Fowler, both of Quincy, Mass., June 1.

Victor Albert Williams, to Miss Mary Bryan, both of Pittsburgh, June 3.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

SEVERAL "MIXED" VACCINES NOT ADMITTED TO N. N. R.

Report of the Council on Pharmacy and Chemistry

The "mixed" vaccines which are discussed in the reports that follow were considered by the Council during the past year because inquiries had been received in regard to them.

In publishing these reports it is desirable that the attitude of the Council toward "mixed" vaccines again be stated. In view of the rapid development of bacterial therapy, the possibility for harm that attends the use of bacterial vaccines and the skepticism among experienced clinicians as to the value of vaccines representing a combination of organisms, the Council has felt that it should scrutinize the claims for such agents with exceptional care and that there should be admitted to New and Nonofficial Remedies only those vaccine mixtures for which there is acceptable evidence to indicate that the use of the particular mixtures is rational.

In considering the subject the Council has borne in mind the fact that in many institutions in which cases are studied and the results of therapeutic measures carefully observed and controlled, vaccines of any sort are practically never used—certainly here the stock mixed vaccine has no recognition. Experienced clinicians have generally come to the conclusion that mixed vaccines have no specific action and that any effect they may produce is due to a non-specific protein reaction.

As set forth in the reports, in no case was the evidence submitted by the proprietors sufficient to establish the claims made for the preparations. Hence none was accepted for New and Nonofficial Remedies.

The preparations that form the basis for the accompanying reports are only a few of the many that are being made and sold by some biological houses. Doubtless many of those not dealt with in this report are equally irrational and sold under claims equally—or probably even more—unwarranted than those with which the present report deals.

W. A. PUCKNER, Secretary.

Mixed Vaccines-Abbott

In response to inquiry the Council undertook a consideration of the following "mixed" vaccines sold by the Abbott Laboratories:

M. Catarrhalis-Combined-Bacterin, said to contain killed Micrococcus catarrhalis, Bacillus Friedländer, Pneumococci, Streptococci, Staphylococcus aureus and Staphylococcus albus.

B. Coli-Combined-Bacterin, said to contain killed Streptococcus viridans, Streptococcus hemolyticus and Bacillus coli.

Pertussis-Combined-Bacterin, said to contain killed Bacillus pertussis, Pneumococci, Streptococci, Staphylococcus albus, Staphylococcus aureus and Micrococcus catarrhalis.

Streptococcus-Rheumaticus-Combined-Bacterin, said to contain killed "Streptococci (Rheumaticus, Viridans, etc.)" and Pneumococci.

Streptococcus-Viridans-Combined-Bacterin, said to contain killed Streptococcus viridans, Streptococcus hemolyticus, Pneumococcus and Staphylococcus albus.

The Abbott Laboratories were asked to assist in the investigation of these products and to submit evidence to establish their eligibility for admission to New and Nonofficial Remedies. The manufacturer was informed that the Council accepts "mixed" vaccines or bacterins, provided the usefulness of these products is established by acceptable clinical evidence, and references to the literature bearing on the value of the preparations were requested.

The Abbott Laboratories submitted specimens of the products, the advertising matter therefor and a considerable list of references to current literature; all of which was transmitted to the Committee on Serums and Vaccines for consideration. In due time a referee of the committee submitted the following report:

THE COMMITTEE'S REPORT

The referee has studied the literature covered by the references submitted. In general the articles are favorable to the use of vaccines, though many of these papers do not consider "mixed" vaccines; indeed, a number of the articles do not discuss treatment at all, but are devoted entirely to the consideration of etiology of the disease. Many of the papers are by those who are obviously overenthusiastic on the subject of the use of biologic preparations. One paper—not included in the references submitted by the Abbott Laboratories—records an alarming reaction following a dose of mixed vaccine; no claim is made that improvement followed.

The following comments on the submitted references are offered:

M. Catarrhalis - Combined - Bacterin.—Only four of the nine references given deal with the therapeutic use of the vaccine. The reported results in general were favorable, but sometimes in the discussion evoked by certain of the papers, views the reverse of those expressed by the author were brought forward. The enthusiasm of one writer is shown in his statement that following the use of vaccine in cases of carbuncle complicating diabetes the sugar in the urine disappeared or was reduced. One observer, who reports excellent results in nasal and pharyngeal catarrh, speaks of certain vaccines as "bulk goods," while another considers "——'s No. 7" as the proper thing. It is evident that the reports are not based on careful, scientific data, or such unscientific definition of the product employed would not be used.

B. Coli-Combined-Bacterin.—In the references cited in support of this preparation the following general statements are noted: One enthusiastic writer says, "It must be recognized that we have no satisfactory explanation of the action of vaccines, and their use at present is empirical." One author dwelt on the superiority of autogenous vaccines but admits that occasionally stock vaccines are indicated. One vaccine therapist in concluding an article states, "It is simply impossible to practice modern urology without our modern biologic products." Yet it is a well-known fact that many successful and capable genito-urinary surgeons avoid the use of vaccines, mixed or simple.

Pertussis-Combined-Bacterin.—These reports are uniformly favorable, but are not controlled and their value is not to be compared with a recent report from the New York City Department of Health which indicates that the vaccine is practically valueless. It is noted, further, that one of the articles cited which dealt rather fully with the treatment of pertussis did not mention vaccines.

Streptococcus-Rheumaticus-Combined-Bacterin.—The references cited in support of the preparations by the manufacturer give no support whatever for the use of mixed stock vaccines. The first reference deals with the relation of Streptococcus viridans to arthritis deformans and endocarditis and reports the following cases:

Case 1.—Vaccine case—improvement after eight months.
Case 2.—Slight improvement following use of vaccine.
Case 3.—Slight improvement following use of vaccine.
Case 4.—Marked improvement.
Case 5.—Prompt improvement.
Case 6.—Vaccine not mentioned.
Case 7.—Vaccine followed by slight improvement.

In each of the cases other methods of treatment were used. The paper shows the etiologic relation of Streptococcus viridans rather than the value of vaccines. There is no indication that stock vaccines were used, though the paper is not clear on this point. The second paper deals with the application of vaccine therapy in the treatment of arthritis. This paper is by a man who is avowedly an enthusiast on vaccine therapy. The indications are that he generally used a mixed autogenous vaccine, but the reports of cases are not always clear. This writer apparently makes no serious attempt at the classification of the joint conditions he treats. The third reference is a purely experimental study and has no bearing on the use of vaccines in treatment. The fourth article was admitted by the manufacturer to be "negative as regards evidence." The fifth reference specifically states that "the vaccine must be autogenous." The sixth reference deals with the experimental production of appendicitis by the use of diplococci, and has not the most remote bearing on the use of vaccines in the treatment of rheumatism.

Streptococcus-Viridans-Combined-Bacterin.—The article which bears evidence of more care than the others admits that we are not in position to state the value of vaccines in pyorrhea but the author believes they may have value supplementary to local treatment.

It is not surprising that a large number of favorable reports can be accumulated when we appreciate how promptly men report what they consider to be their successes and how commonly they leave their failures unrecorded. Bearing in mind the fact that these stock mixed vaccines, though before the profession for many years, have not been used, or continued in use, in hospitals where work is rigidly controlled and that they are used practically not at all in the large government hospital service, a candid critic must hold that there is no substantial evidence in favor of the therapeutic use of a mixed vaccine, certainly not for stock "goods" and that probably there is but a limited field for the employment of autogenous vaccines.

The referee calls attention to a shift in the advertising matter on vaccines—the tendency to recommend vaccines to be used in conjunction with drugs. A heading in the Abbott booklet reads, "The Biologics Do Not Replace Drugs"; and the paragraph speaks of serums and bacterins as "new tools, supplemental to those we already have, but not replacing them." . . . "We need them both."

The referee recommends that the several mixed vaccines discussed in this report be not accepted on the grounds that satisfactory evidence of their value is wanting.

Having been endorsed by the Committee on Serums and Vaccines the Council adopted the report and declared M. Catarrhalis-Combined-Bacterin, B. Coli-Combined-Bacterin, Pertussis-Combined-Bacterin, Streptococcus-Rheumaticus-Combined-Bacterin and Streptococcus-Viridans-Combined-Bacterin ineligible for admission to New and Nonofficial Remedies.

Catarrhal Vaccine Combined-Lilly and Influenza Mixed Vaccine-Lilly

Because of inquiry received, the Council requested Eli Lilly and Company to aid in determining the acceptability of the following products for New and Nonofficial Remedies: "Catarrhal Vaccine Combined," said to contain killed cultures of the Bacillus of Friedländer, Micrococcus catarrhalis, Staphylococcus aureus and albus, Pneumococcus and Streptococcus; "Influenza Mixed Vaccine," said to contain killed cultures of Staphylococcus albus and aureus, Streptococcus, Pneumococcus, Micrococcus catarrhalis and Bacillus influenzae.

Lilly and Company sent the circulars, etc., used in advertising these products. A circular for "Catarrhal Vaccine Combined" contained the following claim:

> "Catarrhal Vaccine has been especially useful in many respiratory infections, including bronchitis, pharyngitis, rhinitis, chronic catarrh and in the mixed infections of pulmonary tuberculosis."

A circular for "Influenza Mixed Vaccine" contained the following:

> "The vaccine is useful in the treatment of influenza and ordinary colds, and in any infection in which the Bacillus influenzae is the causative agent."

An advertising pamphlet contained the following:

> "Catarrh, Acute and Chronic; Colds, *Influenza.*—The micro-organisms capable of producing catarrhal conditions of the nose and pharynx and most commonly isolated are B. Friedländer, M. catarrhalis, staphylococcus, pneumococcus (in infections beginning in the larynx), B. *influenza* and streptococcus. These organisms are found normally in the respiratory passages and acquire virulence only when resistance has been lowered through overwork, exposure to cold, etc.
>
> "The results following the use of Catarrhal Vaccine Combined (in the non-epidemic forms) and Influenza Mixed Vaccine (in the epidemic types) have been very satisfactory, due to the great vascularity of the tissues. Acute attacks are aborted altogether or shortened in duration and the danger of complications greatly minimized."

No evidence was submitted which warrants the preceding claims nor is the Council aware of any reliable testimony to indicate that the administration of the mixtures here discussed is warranted or desirable. On the recommendation of the Committee on Serums and Vaccines the Council voted that "Catarrhal Vaccine Combined-Lilly" and "Influenza Mixed Vaccine-Lilly" *be not included* in New and Nonofficial Remedies because satisfactory evidence of their value is wanting.

Influenza Serobacterin Mixed-Mulford

Because of inquiry received, the Council took up the consideration of "Influenza Serobacterin Mixed-Mulford," and requested the Mulford Company to present evidence to establish the admissibility of the preparation to New and Nonofficial Remedies. The Mulford Company sent specimens of the serobacterin in question, an advertising circular and a letter by the director of its Biologic Laboratories.

According to the label on the package, the preparation is made from the following organisms: Bacillus influenzæ, Staphylococcus aureus, Staphylococcus albus, Streptococcus, Pneumococcus and Micrococcus catarrhalis (group). This mixture is recommended by the manufacturer:

> "For the prophylaxis and Treatment of Common Colds, Mixed Infections of the Respiratory Mucous Membranes, Acute and Chronic Catarrhal Conditions of the Nose, Throat and Respiratory Passages."

No evidence is submitted for this recommendation except that in "colds and bronchitis and the other common infections of the upper respiratory passages . . . five or six bacteria are very commonly present—two or more of them are nearly always present . . . ." and the letter by the director of the Mulford Biologic Laboratories expressing the belief that in his own case the use of the mixed vaccine has aborted or prevented colds.

As regards the use of this complex biologic preparation:

First, the cause of common colds is, at the present time, quite unknown. One of the most striking things is that at the beginning of a cold the organisms to be cultivated from the nasal mucous membrane are very few in number and there is no uniformity in the type of organism found. If some one of the well-known organisms (Streptococcus, Staphylococcus, Pneumococcus, Micrococcus Catarrhalis, Influenza Bacillus, etc.) were responsible, we should expect to find one of them preponderating and in overwhelming numbers. This is far from the case. After the duration of the cold for a day or two with the increased production of mucus and apparently with the infection of a mucous membrane whose powers of resistance have been greatly lowered, bacteria of all kinds are to be found in immense numbers. There is considerable reason for believing that an ultramicroscopic organism is responsible for this condition (See Foster, *Journal of Infectious Diseases*, November, 1917, **21**, 451).

Second, there is no acceptable clinical evidence that vaccination with the influenza bacillus, the Streptococcus, the Pneumococcus or the Micrococcus Catarrhalis will influence the course of an infection due to one or the other of these organisms. It has been repeatedly found that a staphylococcus vaccine is of a certain degree of value when the infection with the staphylococcus is localized, but it is well known that general systemic infections with the staphylococcus are not at all benefited.

Third, the letter submitted as evidence by the Mulford Company is not convincing. The Council is not prepared to accept evidence of this sort unless it is in volume large enough to justify a definite conclusion.

Holding that there is no evidence for the value of this mixture, the Council declared "Influenza Serobacterin Mixed-Mulford" inadmissible to New and Nonofficial Remedies because its use is illogical.

Sherman's Mixed Vaccine No. 40

Because of inquiry received the Council decided to consider this preparation and requested the manufacturer, G. H. Sherman, Detroit, Mich., to submit evidence in support of the claims made for it.

This vaccine is said to be made from killed cultures of Streptococcus, Pneumococcus, Micrococcus catarrhalis, Staphylococcus aureus, and Staphylococcus albus. In the printed matter sent out by G. H. Sherman this vaccine is recommended for hay-fever, in which it is stated that some of the symptoms are due to bacterial invasion of the respiratory mucosa; for tonsillitis, both as a remedy and as a prophylactic against rheumatic and other sequelae; for "throat infections"; for rhinitis with the claims that acute coryza can be aborted within twenty-four hours; for pneumonia in which it is advised for all stages; for laryngitis, for bronchitis, and for asthma.

No acceptable evidence was submitted as to the value of the product in the treatment of any of the foregoing conditions. In view of what is known about non-specific reactions, it seems likely that any influence which this vaccine may have on the divers conditions enumerated by the manufacturer, is due to this, rather than to the combination of organisms used in its preparation.

On the recommendation of the Committee on Serums and Vaccines, the Council declared "Sherman's Mixed Vaccine No. 40" ineligible to New and Nonofficial Remedies because the therapeutic claims made for it are unwarranted (Rule 6) and because the combination, in view of its complexity, is irrational and detrimental to sound therapy (Rule 10).

Correspondence

PROCAIN AND NOVOCAIN IDENTICAL

To the Editor:—It appears that in certain quarters the attitude is taken that the local anesthetic sold as procain is not identical with that marketed as novocain. The Subcommittee on Synthetic Drugs of the National Research Council believes it important that this misunderstanding should be corrected and hence offers the following explanation:

The monohydrochlorid of para-amino-benzoyldiethyl-amino-ethanol, which was formerly made in Germany by the Farbwerke, vorm. Meister, Lucius and Bruening, Hoechst A. M., and sold under the trademarked name "Novocaine," is now manufactured in the United States. Under the provisions of the Trading with the Enemy Act, the Federal Trade Commission has taken over the patent that gave monopoly for the manufacture and sale of the local anesthetic to the German corporation, and has issued licenses to American concerns for the manufacture of the product. This license makes it a condition that the product first introduced under the proprietary name "Novocaine" shall be called procaine, and that it shall in every way be made the same as the article formerly obtained from Germany. To insure this identity with the German novocain, the Federal Trade Commission has submitted the product of each firm licensed to the A. M. A. Chemical Laboratory to establish its chemical identity and purity, and to the Cornell pharmacologist, Dr. R. A. Hatcher, to determine that it was not unduly toxic.

So far the following firms have been licensed to manufacture and sell procain: The Abbott Laboratories, Ravenswood, Chicago; Farbwerke-Hoechst Company, New York; Rector Chemical Company, Inc., New York, and Calco Chemical Company, Bound Brook, N. J. Of these, the first three firms are offering their products for sale at this time, and have secured their admission to New and Nonofficial Remedies as brands of procain which comply with the New and Nonofficial Remedies standards.

While all firms are required to sell their product under the official name "Procaine," the Farbwerke-Hoechst Company is permitted to use the trade designation "Novocaine" in addition, since it holds the right to this designation by virtue of trademark registration.

In conclusion: Procain is identical with the substance first introduced as novocain. In the interest of rational nomenclature, the first term should be used in prescriptions and scientific contributions. If it is deemed necessary to designate the product of a particular firm, this may be done by writing Procaine-Abbott, Procaine-Rector, or Procaine-Farbwerke (or Procaine [Novocaine brand]).

Julius Stieglitz, Chicago.
Chairman, Subcommittee on Synthetic Drugs, National Research Council.

Comment.—Physicians should adopt the Federal Trade Commission's recommendation to use the official name of the licensed drugs in connection with all written articles and prescriptions, and if the proprietary brand name is to be used, to place this side by side with the official name.

The official names so far adopted by the Federal Trade Commission are:

Arsphenamine for salvarsan, diarsenol and arsenobenzol, etc.
Neoarsphenamine for neosalvarsan, neodiarsenol and novarsenobenzol, etc.
Barbital for veronal.
Barbital-sodium for medinal and veronal-sodium.
Procaine for novocaine.
Procaine nitrate for novocaine nitrate.
Phenylcinchoninic acid for atophan.

SERUM DIAGNOSIS OF SYPHILIS

To the Editor:—Regarding the communication of Dr. Hindman (The Journal, May 25, 1918, p. 1561) in which he states that "sodium acetate [recommended by me for preservation of complement, The Journal, Sept. 22, 1917] forms a precipitate with some guinea-pig serums," let me state, after considerable experience with this method, that no such precipitate occurs from acetate solutions up to 25 per cent. strength. Solutions above this strength may cause a crystalline precipitate, which can be sedimented off and does not interfere in any way with the complement fixation reaction.

In regard to his observation as to the possibility of getting a negative reaction in a weakly positive case, on account of the sharp reaction or possible overaction of acetated complement, allow me to suggest that this is a matter entirely of exact technic.

In my experience, which has been entirely with guinea-pig serum, I found that in using acetated complement in which the complementary unit has been stabilized, one must be much more exact in the technic (as excess would give overactivity) than in handling an unpreserved complement in which the complementary activity is constantly diminishing, especially in warm weather.

Therefore the unit not only of the guinea-pig complement but also of the amboceptor, the antigen and the complementary unit for each individual batch of red cells (see my note, The Journal, Nov. 17, 1917, p. 1728) must be determined by titration. If, then, the patient's serum is inactivated to do away with its varying content of complement which would act as excess, one will not, when using titrated units of acetated complement, get any negative reactions in weakly positive cases.

B. W. Rhamy, M.D., Fort Omaha, Neb.
Captain, M. R. C., U. S. Army.

THE CONTROL OF VENEREAL DISEASE IN THE ARMY

To the Editor:—Owing to the great interest awakened in the morbidity of venereal diseases incident to the prime necessity of a supply of healthy, vigorous manhood with which to win the war, the public is now learning how vitally necessary it is to keep undefiled the spring of that stream not alone by sanitary regulations of extracantonment zones but also of the cities and towns from which our soldiers enlist or are drafted.

We all know the report, how well founded I cannot say, that Germany sent a flood of prostitutes to infect and disable the French and British troops; but whether Germany had anything to do with it or not, the soldier in the hospital from a venereal disease is just as much a noncombatant as a soldier disabled in combat. Moreover, he occupies and demands shelter, medicines, transportation, beds, bedding, nurses and doctors, all of which tax the military resources and to which he should not be entitled since he takes an oath to defend the United States against all their enemies and not to go to bed sick and to that extent aid Germany.

Now that we are alive and anxious to do, for military reasons, what we would not do for purely moral reasons or public health reasons in time of peace, we see plainly that prostitution is pro-German and that every one engaged in the occupation of prostitution or aiding or abetting it by pandering or renting rooms or buildings for its practice is an enemy of the Republic and pro-German.

I believe, therefore, that as a legal measure two things would cut to the root: 1. Punish all landlords, hotel managers, boardinghouse keepers and other persons who maintain places for the practice of prostitution by a term of years in a penitentiary. 2. Punish all prostitutes by restraint in internment camps for treatment and segregation during the war. I do not suggest fines because the traffic is already burdened with high rentals and graft bribes and could no doubt stand more, because those whom this act is designed to reach will gladly pay a nominal fine, viewing it very lightly, too, as a tax laid by the state on the traffic, which is a matter to our minds unthinkable.

Frank Thomas Woodbury, M.D.,
Camp Gaillard, C. Z.
Lieutenant-Colonel, M. C., U. S. Army.

"THE VALUE OF THE WASSERMANN REACTION"

To the Editor:—Referring to the article "The Value of the Wassermann Reaction: A Reply," by Drs. Larkin, Levy and Fordyce (The Journal, June 1, 1918), may I ask the courtesy of a few lines of space; although Dr. Symmers needs no protector, the responsibility for publishing Dr. Symmers' article which they criticize being entirely mine. At a future date Dr. Symmers will answer the points which the authors criticize.

The article by Dr. Symmers was read and approved by me as director of laboratories of Bellevue Hospital at that time. Dr. Symmers had nothing to do with the performance of the Wassermann reactions. The methods employed in the pathologic department of Bellevue Hospital are well known, as a description was published by Dr. Cyrus W. Field, and they thus became public property. I might add that Dr. Field and myself were members of the committee appointed by Dr. Haven Emerson several years ago to bring harmony of methods into the various laboratories, public and private, of New York City, and that, therefore, we believe ourselves to be entirely familiar with the details of the technic of the Wassermann reaction. The laboratory at Bellevue Hospital was one of the first to make routine Wassermann examinations, and for several years every patient entering Bellevue Hospital and remaining for a period of three days or longer was thus investigated, so that many thousands of reactions have been made. Bellevue Hospital was fortunate, moreover, in having the expert services of serologists of repute, such, for example, as Dr. Cyrus W. Field, and their co-workers were always men of training and ability.

In regard to the matter of careless postmortem observations, I may state that, as director of laboratories of Bellevue Hospital, I saw most or nearly all of the necropsies and personally corrected all postmortem records during the thirteen years of my incumbency. Any fault that is to be found with the observations is largely mine, and I am willing to assume the responsibility for it, although in fairness to Dr. Symmers it should be stated that, during practically the whole of the Wassermann era, he has been actively associated with me at Bellevue Hospital and has acted in an advisory or supervisory capacity in a great many additional postmortem and microscopic investigations.

The assumption of Drs. Larkin, Levy and Fordyce that because no mention of histologic examinations was made in the paper by Dr. Symmers, this branch of activity at Bellevue Hospital is neglected, is unwarranted, since it has always been one of the rigid rules of the laboratory to keep pieces of the viscera of all bodies coming to necropsy, and in the great majority of cases the histologic preparations still form part of the laboratory records. I should also like to call attention to the fact that Drs. Larkin, Levy and Fordyce have been guilty of the negligence of which they accuse us, namely, they do not state the methods by which they have come to the conclusion that they were dealing with syphilis. Moreover, in detailing the remarkable successes which they have had, clinically and pathologically, with the Wassermann reaction, they neglect to detail the serologic methods employed, while at the same time they severely criticize Bellevue Hospital for a like omission, in spite of the fact that a report of our methods has been published.

Charles Norris, M.D., New York.
Formerly Director of Laboratories, Bellevue and Allied Hospitals.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SLOUGHING OF GUMS AFTER INSTALLATION OF GOLD BRIDGE

To the Editor:—A perplexing problem presents itself here in my office which is associated with that of a dentist, Dr. J. Wallace. His patient was referred to me because of a sloughing of the mucous membranes of the mouth taking place thirty-six hours after a gold bridge had been placed therein. The sloughing seems most pronounced at the immediate point of contact with the gold, which was 22 carats fine. Phosphoric acid enters into the cement, but at the crown margin the sloughing is not pronounced. The symptoms are those of pronounced salivation. The cement used is Fellowship Cement. Could you shed some light on the subject? Many have used this cement without any ill effects, and this is the first case of this nature to come to my attention.

D. H. Pettingell, M.D., Ely, Nev.

Answer.—From the meager description of the case, it is difficult to solve the problem offered. However, it is certain that neither the 22 carat gold nor the cement used was a cause of the sloughing of the gums. If a local anesthetic was injected into the gums during the fitting or setting of the bridge, it may have caused the destruction of the adjoining tissues. This may follow the use of local anesthetics containing suprarenal products. It was rather soon for an infection to result, though the fitting of the abutments may have preceded the setting of the bridge several days. If this were the case, the gums may have been infected in the primary operation. The description leads one to think of what is known as Gilmer's disease—acute ulcerous gingivitis, or, as it is sometimes called, "trench mouth." Acute ulcerous gingivitis is due to the *Bacillus fusiformis.* It is a rather uncommon affection of the gums, commencing with ulceration of the gum margins about a few teeth. The gums are destroyed rapidly, leaving a grayish deposit not unlike that found covering the so-called "mucous patches." There is extensive salivation, slight rise in temperature, and fetid breath. The treatment is indicated by the nature of the organism causing it, which is an anaerobe; that is, an oxidizing agent such as hydrogen peroxid, with a weak solution of potassium permanganate to offset the odor. Calomel in small doses is indicated.

Incineration.—The incineration of dead human bodies is a practice which, while desirable from the modern point of view, grows slowly on account of lack of popular knowledge concerning it, or on account of religious, superstitious or social prejudices. It needs the impetus of a strong, continuous propaganda to make it the sole method of disposing of the dead. Figures furnished by Dr. Charles Scott Miller, chief of the division of vital statistics of the bureau of health and charities of Philadelphia, show that from 1876, when the first crematory was built in the United States, to and including 1915, the total number of bodies incinerated in the United States was 110,012, and only since 1913 has the annual figure reached the 10,000 mark. In 1913 the number was 10,183, in 1914 it was 11,239, and in 1915 it was 12,767. At present about half the states have crematories. The tremendous impetus given by the war to the study and practice of better sanitation should include a better knowledge and extension of incineration of the dead. While distinctly a sanitary question in some of its aspects, the matter of incineration of the dead, when rightly understood, should appeal even more strongly to sentiment as compared with earth burial.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALABAMA: Montgomery, July 9. Chairman, Dr. S. W. Welch, State Capital, Montgomery.

ARIZONA: Phoenix, July 2. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.

CALIFORNIA: San Francisco, June 25. Sec., Dr. C. B. Pinkham, State Capitol, Sacramento.

COLORADO: Denver, July 2. Sec., Dr. D. A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: New Haven, July 9-10. Sec. Regular Bd., Dr. Chas. A. Tuttle, 196 York St., New Haven; Sec. Eclectic Bd., Dr. J. E. Hair, 728 State St., Bridgeport; Sec. Homeo. Bd., Dr. E. C. M. Hall, 82 Grand Ave., New Haven.

DISTRICT OF COLUMBIA: Washington, July 9-11. Sec., Dr. E. P. Copeland, The Rockingham, Washington.

INDIANA: Indianapolis, July 9-11. Sec., Dr. W. T. Gott, 84 State House, Indianapolis.

MAINE: Augusta, July 2-3. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

MASSACHUSETTS: Boston, July 9-11. Sec., Dr. W. P. Bowers, Rm. 501, 1 Beacon St., Boston.

NEW HAMPSHIRE: Concord, June 24-25. Sec., Dr. W. T. Crosby, Manchester.

NEW YORK: Albany, Buffalo, New York City and Syracuse, June 25-28. Sec., Dr. W. J. Denno, Education Bldg., Albany.

NORTH CAROLINA: Raleigh, June 24-28. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.

NORTH DAKOTA: Grand Forks, July 2-5. Sec., Dr. G. M. Williamson, Grand Forks.

OKLAHOMA: Oklahoma City, July 9-10. Sec., Dr. J. J. Williams, Weatherford, Okla.

OREGON: Portland, July 2. Sec., Dr. Herbert S. Nichols, 802 Corbett Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 9-13. Sec., Mr. N. C. Schaeffer, State Capitol, Harrisburg.

RHODE ISLAND: Providence, July 11. Sec., Dr. B. U. Richards, State House, Providence.

SOUTH DAKOTA: Deadwood, July 9. Sec., Dr. P. B. Jenkins, Waubay.

UTAH: Salt Lake City, July 1-2. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.

WASHINGTON: Tacoma, July 2. Sec., Dr. C. N. Suttner, 415 Old Nat'l Bldg., Spokane.

WEST VIRGINIA: Wheeling, July 9. Health Com., Dr. S. L. Jenson, Masonic Bldg., Charleston.

WISCONSIN: Milwaukee, June 25-27. Sec., Dr. J. M. Dodd, Ashland.

Montana April Examination

Dr. S. A. Cooney, secretary of the Montana State Board of Medical Examiners, reports the written examination held at Helena, April 2-4, 1918. The examination covered 10 subjects and included 50 questions. An average of 75 per cent. was required to pass. Of the 17 candidates examined, 12 passed and 5 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Chicago College of Medicine and Surgery	(1917)	75
Loyola University	(1916)	79.2
Rush Medical College	(1897) 77.5; (1901) 81.5; (1917)	78.1
State University of Iowa College of Medicine	(1891)	77.9
University of Louisville	(1892)	82.2
Maryland Medical College	(1903)	75.2
Harvard University	(1888)	89.5
University of Michigan Medical School	(1906)	77.6
John A. Creighton Medical College	(1917)	75.3
Medico-Chirurgical College of Philadelphia	(1915)	75
FAILED		
Chicago Homeopathic Medical College	(1901)	69.7
Keokuk Medical College, Coll. of Phys. and Surg.	(1901)	62.8
University of Minnesota, Coll. of H. M. and Surg.	(1895)	65.1
Ensworth Medical College	(1909)	34.1
Memphis Hospital Medical College	(1911)	62

Washington January Examination

Dr. C. N. Suttner, secretary of the Washington State Board of Medical Examiners, reports the written examination held at Spokane, Jan. 1-3, 1918. The examination covered 11 subjects and included 110 questions. An average of 75 per cent. was required to pass. Of the 32 candidates examined, 30, including 5 osteopaths, passed and 2 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Denver College of Medicine	(1899)	77.3
Gross Medical College	(1899)	84
University of Colorado	(1914)	83.1
Chicago College of Med. and Surg.	(1916)	78.1, 79.1
Loyola University	(1916)	83.4
Rush Medical College	(1910) 80.9; (1916)	93.1
University of Illinois	(1916)	87.1
Medical College of Indiana	(1898)	79.6
State University of Iowa, Coll. of Homeo. Med.	(1910)	86.8
Baltimore Medical College	1895)	93.3
Harvard University	(1911)	81.9
University of Minnesota	(1917)	79.5
Columbia University	(1916)	90.5
University of Buffalo	(1914)	92.2
Jefferson Medical College	(1908) 77.8; (1916)	82.1
University of Virginia	(1910)	88.7
Manitoba Medical College	(1916)	86.7
Trinity Medical College	(1900)	80.5
McGill University	(1913)	75.6
Kyoto Imperial University	(1904)	82.5
Kyushu Imperial University	(1908)	83.1
Okayanna Special Medical School	(1906)	86.4
FAILED		
Saginaw Valley Medical College	(1902)	54
University of Oregon	*	30.3

* Year of graduation not given; graduation not verified.

Missouri March Examination

Dr. G. H. Jones, secretary of the Missouri State Board of Health, reports the oral and written examination held at St. Louis, March 19-21, 1918. The examination covered 14 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 49 candidates examined, 42 passed and 7 failed. Eighteen candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Rush Medical College	(1917)	90.9
University of Illinois	(1917)	85.4
Marion-Sims-Beaumont Medical College	(1903)	85.3
National University of Arts and Sciences	(1918)	75.1, 77.1, 78.1, 80.1, 80.2, 81.1, 81.4, 81.6, 82 1, 82.1, 83.6, 84, 84.1, 84.2, 84.7, 84.9, 85.1, 85.1, 85.3, 85.4, 85.5, 85.9, 85.9, 86.4, 86.5, 87.1, 87.7, 88.6, 91.1.
St. Louis Coll. of Physicians and Surgeons	(1915) 75; (1917)	79.3
St. Louis University	(1918)	82.9, 85.3, 87.1.
Washington University	(1918)	90.5
John A. Creighton Medical College	(1917)	86.7, 89.8
University of West Tennessee	(1915)	75.1
Vanderbilt University	(1917)	85.1
FAILED		
National University of Arts and Sciences	(1918)	57.2
St. Louis University	(1905)	72.1
Meharry Medical College	(1916) 72.8; (1917)	66.1, 72.8
University of West Tennessee	(1915)	63.3, 68.4

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Chicago College of Medicine and Surgery ..(1910)	(1912)	Illinois
Illinois Medical College	(1908)	Illinois
University of Illinois	(1914)	Illinois
Keokuk Medical College	(1898)	Iowa
Hospital College of Medicine	(1897)	Kentucky
Maryland Medical College	(1905)	W. Virginia
Beaumont Hospital Medical College	(1888)	Iowa
Ensworth Medical College	(1909)	Kansas
St. Louis College of Phys. and Surg. ....(1905)	(1909)	Illinois
University Med. Coll. of K. C. ......(1904) (1912)	(1913)	Kansas
Medical College of Ohio	(1878)	Indiana
Meharry Medical College	(1915)	Kentucky
University of Tenessee	(1909)	Tennessee
Vanderbilt University	(1908)	Tennessee

Illinois February Examination

Mr. F. C. Dodds, superintendent of registration, Department of Registration and Education, reports the written examination held at Springfield, Feb. 6-7, 1918. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 65 candidates examined, 50 passed and 15 failed. The following colleges were represented:

College	Year Grad.	Total No. Licensed
PASSED		
Chicago Coll. of Med. and Surg.	(1908) (1916, 2) (1917, 17)	20
College of Phys. and Surg., Chicago	(1908)	1
Jenner Medical College	(1915) (1917)	2
Loyola University	(1916) (1917, 8) (1918, 2)	11
Rush Medical College	(1917)	7
University of Illnois	(1912)	1
Indiana University	(1917)	1
Keokuk Medical College, College of P. & S.	(1904)	1
Hahnemann Med. Coll. and Hosp. of Philadelphia	(1904)	1
Meharry Medical College	(1914) (1916, 2)	3
University of Tennessee	(1899)	1
University of Toronto	(1911)	1
FAILED		
Bennett Medical College	(1914)	1
Chicago College of Med. and Surg.	(1916, 2) (1917, 5)	7
Chicago Hospital College of Medicine	(1915)	2
Loyola University	(1917)	3
Meharry Medical College	(1912)	1
Queen's University	(1913)	1

Medicolegal

Physician Entitled to Damages for Eviction of Trespass

(Grammont Holding Co., Inc., v. Lellmann (N. Y.), 168 N. Y. Supp. 29)

The Supreme Court of New York, Appellate Term, First Department, in reversing a judgment obtained by the plaintiff, and granting the defendant, a physician, a new trial, with $30 costs to him to abide the event, says that this action was brought to recover for rent of an apartment in a house owned by the plaintiff. The only matter litigated was the counterclaim of the defendant physician, based on acts of the plaintiff during the defendant's occupancy, which resulted in his abandonment of the premises. It appeared that the plaintiff undertook to reconstruct its building; that in the course of that work it disconnected the telephone service, stopped the operation of the elevator, and attempted to run pipes through the defendant's apartment; and that as a result of the work in the building water and large quantities of dust and plaster entered the apartment occupied by the defendant. There were also continuous loud noises and shocks generally accompanying the performance of the work which shook the premises. The defendant claimed damages by reason, among other things, of interference with his business as a practicing physician, and expense entailed in moving. The plaintiff urged that damages for an eviction were limited either to a nominal figure or at most to the difference between the rental value of the premises as they were and the rent reserved in the lease, but conceded that, in case the interference with the leased premises amounted substantially to a trespass, a more liberal measure of damages would be applicable. The evidence here presented a case wherein, short of deliberate personal violence offered to the defendant, the proof of trespass on the leased premises was overwhelming. By the very rule conceded by the plaintiff, therefore, the defendant was entitled to prove at least the loss of business which he suffered by reason of such interference. It was unnecessary to pass on all the items of damage which the defendant claimed and undertook to prove, as the evidence was excluded by the trial court. Indeed, the defendant's position did not rest solely on an eviction, but might perhaps with equal force be sustained on the theory of trespass alone.

Adulteration with Saccharin

(People v. Excelsior Bottling Works, Inc. (N. Y.), 168 N. Y. Supp. 570)

The Court of Special Sessions, City of New York, holds that the defendant, in keeping and offering for sale a beverage called strawberry soda, which contained saccharin, was guilty of violating Section 68 of the Sanitary Code of the board of health of the department of health of the city of New York, prohibiting the having, selling, or offering for sale of any adulterated or misbranded food, including beverages. The court holds that this section and a resolution of the board of health, to the effect that foods containing saccharin shall be deemed adulterated, were passed in pursuance of a reasonable exercise of the public power; and that they are not obnoxious, in any respect, to the provisions of the constitution of the United States, or of the constitution of the state of New York. The opinion of Chief Justice Russell says that the testimony in this case was very voluminous and covered about 477 pages of stenographic minutes. Eighteen witnesses were examined at length, several of whom were world-famed scientists, and eminent in the medical profession as food experts. This record, at least, showed that there is a difference of opinion among those best qualified to judge respecting saccharin and on the question of excluding it from foods. Saccharin is a substitute for sugar, and itself has no food value. Under the authorities, although as an ingredient of food it may not be deleterious, still its use can be absolutely prohibited. An article may be manufactured in imitation or semblance of a well known article in common use, and consumers or purchasers may be thus imposed on. Legislation intended to prevent such an article from being manufactured has been held valid. The legislature certainly cannot forbid or wholly prevent the sale of a wholesome article of food. But in forbidding the sale and use of saccharin as food, no attempt was made to prevent the sale of a wholesome article of food. Saccharin is not a food, but a product of coal tar, a synthetic substance from a laboratory. The object of such regulation was to prevent imposition and fraud. Nor will a suitable label afford a sufficient protection to the public against fraud. The blind and illiterate are entitled to the full protection of the law. Then, too, a certain amount of nourishment will surely be lost if saccharin is permitted to displace sugar as a sweetener.

Liability for Representations and Negligence or Incompetence of Physicians

(Denver & R. G. R. Co. v. Ptolemy (Colo.), 169 Pac. R. 541)

The Supreme Court of Colorado reverses a judgment obtained by the plaintiff for damages for personal injuries, because it holds that the evidence failed to justify the setting aside of a settlement previously made in consideration of the payment to her of $450, but which she alleged that she was induced to accept by reason of the false and fraudulent representations made to her by the defendant company's claim and by its physician as to her condition and the nature and extent of her injuries. The court says that the plaintiff had the burden of proving the charge that the defendant's agents—the physicians and the claim adjuster—deliberately and consciously misrepresented to her her physical condition, with intent to induce her to make the settlement, and that she was thereby induced to make it. To prove fraud the evidence must be clear, precise and indubitable. It could not be said that such evidence was presented in this case. The plaintiff herself testified only that the physician who had entire charge of the case, after her first day in the hospital, and during her stay there, stated "as his opinion" that her injuries were not serious. She now complained that she was, in fact, suffering from internal injuries, but in at least two places in her brief it was said that the defendant's physicians failed to discover such injury. Clearly, then, they were not and could not be guilty of fraudulent misrepresentation as to that injury. If they failed to discover it, that might indicate negligence on their part, but that was no part of the issue made by the pleadings. If the physicians were negligent or incompetent, the defendant would be liable for the results of such negligence or incompetence only in case it appeared that the defendant knew or should have known of the physicians' unfitness, and that, too, in a case wherein the pleadings presented that question. A physician's diagnosis is necessarily a matter of opinion, except in cases wherein the ailment is external and visible. There was in this record no evidence which even raised a suspicion that the statements made to the plaintiff as to her condition were not made in perfect good faith. Neither of the physicians who attended her for the defendant was present at the settlement, nor did they at any time take part in the negotiations for it. The attempt to invalidate the contract of settlement wholly failed.

Testicle Held to Be Member of Body

(State v. Sheldon (Mont.), 169 Pac. R. 37)

The Supreme Court of Montana, in affirming a conviction of the defendant of the crime of mayhem in depriving a man of his right testicle, says that the sufficiency of the information depended on whether the right testicle of a male human being is "a member of his body" within the meaning of Section 8304 of the Revised Codes of Montana defining the crime of mayhem, and that the court thinks it so obviously is that any discussion of the matter is unnecessary. The contention that it is not was based on the claim that at common law the only members of the body within the definition of mayhem are those directly useful in fighting, such as to enable one to defend oneself or to annoy one's adversary. But however this may be, and there is room for doubt about it, the answer is that the Montana statute is not so restricted.

Social Medicine, Medical Economics and Miscellany

THE GREAT MELTING POT

The Amalgamation of Our Citizens Through the War

The Ambulance des Alliés, as its title implied, was equipped and operated for the Allies; at least that was the interpretation put on its name by the chief surgeon—an American. Consequently, when in due course of time our —th Division quietly slipped in and occupied an adjoining sector, where they literally rubbed elbows, company by company, with their French comrades in arms, proper steps were at once taken to receive our Amex's and give them a touch of home life. As this particular sector was only to be temporarily occupied by our troops, it had been judged more expedient not to have any of our sanitary formations in the zone of the lines of communications. A wounded American received first aid at his regimental aid station, from which post he was sent back to a French evacuation hospital for further treatment. As the Ambulance des Alliés was operated under the administrative supervision of the French Service de Santé, the transfer of wounded Americans to our formation presented no formidable difficulties. Our hospital boat could go up the river as far as division headquarters, making the question of transportation an exceedingly simple one.

When the first group of our wounded boys arrived in ambulances at the boat landing, saw the nurses in their smart uniforms, and heard the English language spoken, after having spent several days in a French hospital, they burst into tears.

A perusal of their "diagnosis tags," followed by short chats with one after the other of the first fifty or so American admissions, suggested the title for this story. Armenia, Ireland, Italy, Poland, Russia, Sweden, and the French province of Canada were all represented, often in the same company. A sturdy descendant of the Pilgrim fathers was flanked on either side by an offspring of the Ghetto and a Swedish emigrant; a Polish factory boy tried to converse in broken English with his neighbors, a French Canadian on one side, an Italian on the other; an irrepressible Irish lad flung Bowery jokes at an Armenian, the latter smiling his polite misunderstanding. They were all Americans, all doing their "bit" for the common cause of liberty; what mattered a few generations more or less, spent on American soil? "We tutti have to crossa da bigga oceano soma tim," said Tony Damiano.

Ah! the proud look on the boys' faces as they one and all vouchsafed the information that they were not drafted but had volunteered. That the Middle West is the *great melting pot* for the downtrodden masses of the Old World is a fact long admitted by all; but that this particular division, recruited in the New England States, should contain the same elements in its cadres was interesting and significant.

Beppo Yanko, called "Macaroni" by the nurses, was as handsome a specimen of southern Italy as one could wish to see. His birthplace was Calabria, his country: "Me Americano, voluntario! Me landa en America at ten years; me liva en Lawrence, Mass.—do averything—shina da shoe, worka da shov', sella da banan; Guerra he come, me fighta for ma new country; me soldier boy, var' fina ting; me wounda in da leg by big Germ'; me killa da son-of-a-gun, no care go-dam; killa some more soma day!" Good old macaroni! In spite of his queer handling of the English language, his comrades respected and treated him as one of their own—as a pal.

Maddy Archambault, lineal descendant of a long line of "voyageurs," was following the career of a lumber jack in the Maine woods when the call came to him and he enlisted in the nearby village. With his knowledge of "habitant" French, which managed to be understood wherever he went, Maddy had, immediately on landing in France, become the unofficial interpreter, go-between and purchaser of "extras" for his company mess. A quiet, modest, retiring sort of lad was our Maddy, yet, on his breast was the coveted Croix de guerre, which a French general had pinned on him for conspicuous bravery. His face and arms had been badly peppered by shrapnel, which made the boy sometimes wonder whether his best girl at home, up in the Maine woods, would still favor him with her smiles when he returned. Old boy, if Angéline is the right sort of girl, she will fasten her adoring and admiring eyes on your military cross, and feign not to see the absence of part of your nose and upper lip. Bon courage and good luck to you. With Duplessis, Labelle and Leclerc—all good old French Canadian names—you formed a quartet of sterling fighters; would that more of your kind could slip across the border and enter our army.

Iky Rhozinski, typical product of any large city ghetto, felt the importance of his new rôle in society. Gone were the sloping shoulders, pussy-foot gait and shifting eye, inherited traits which are the natural result of centuries of persecution. Iky stood like a flagpole and looked you straight in the eye; he had been wounded "in line of duty," suffered uncomplainingly and was secretly very proud of his bandaged and splinted limb; he felt that he was an American, and his comrades treated him as such.

To Walter Brodowski, Catholic, Iky should have been anathema, for there has never been any love lost between Catholics and Jews in unhappy Poland. The two frequently conversed together, now in broken English, now in Polish, apparently on the very best of terms.

Walter—he confided to me that he had been baptized Stanislas but had found Walter more comfortable for school purposes—was a typical Slav with tawny hair, high cheek bones, low forehead, dilated nostrils, large mouth and sad blue eyes. Several years of premature factory life had given him that dull, hopeless look so familiar to settlement workers. He was doing his manly best to overcome the old handicap, but it still lingered in gait and facial expression. Six months from now, if all goes well with him in the meantime, Stanislas will be completely emancipated from the old fetters, which had been prematurely crushing and aging him at home. He will be a real man. Just what his attitude will be toward his prewar "job" when he returns is one of the big problems for our sociologists to work out. Where are we going to get our future factory slaves from? Is a man who has breathed God's fresh air, slept under the starry heavens, and faced death unflinchingly going to return to the States in order again to punch the time clock and be known as plain No. 975, d—d Pollak?

Of course Timothy O'Neil had freckles, carroty hair, a stub nose and "pug" chin. Tim, enlisted belligerent in B Co., Nth Infantry, entered the hospital with "mitts" clenched and an angry gleam in his eye. Shot through the left foot, with the wound badly infected and needing immediate surgical attention, Irish Tim announced to all who cared to listen to him that it would take ten nurses and six surgeons to get him into the operating room. "Tim, my boy," said the surgeon quietly, patting him on the shoulder, "you will have to have your foot drained if you don't *wish to lose it*; take these crutches, walk with them to the operating room, and climb on the operating table yourself." Blue eyes looked into equally blue eyes for a few seconds; then a sheepish grin slowly spread over the lad's face as he picked up the crutches and said, "Yes, sir." From that moment, Tim became the star patient of his ward. Full of grit and determination, fairly bubbling over with native wit, he constituted the only necessary tonic, disbursing this commodity in continuous heroic doses. My last recollection of Tim, before a hurried evacuation to a safer zone, was when, leaning on his friendly crutches, he played ball with Iky—also on crutches—in the hospital yard, before an admiring crowd of convalescent English, French and American soldiers. Both were good pitchers and catchers; both stopped overhead balls with a crutch, and nobody sighed for a pennant game that day. How quickly a scene can change during war time! That same courtyard has, since that last happy afternoon, resounded with the daily and nightly rumble of ambulances, bringing in desperately wounded men to us from the nearby improvised lines.

Yan Jansen—no need to tell you that he was of sturdy Norse descent—had grown up to be a famous ski jumper 'way back in Minnesota; he was also an expert lumberman, and had been coaxed to the Maine woods by the lure of war wages and a foreman's job. Neither job nor wages had been able to still the great call to duty, and Jansen had become an excellent ambulance driver, assigned to a French division which occupied a nearby sector. Of his Scandinavian origin, only the name and physique remained, for Yan had finished high school at home and now spoke French with a fluency which made him the envy of his less linguistically inclined comrades.

John Arda, a handsome, black haired, dark eyed Armenian, had given up pedling imitation Oriental rugs in Boston in order to show his gratitude toward his new fatherland. This was truly a holy war for John; his people in Armenia had not been heard from for two years, and he had given them up for dead—or worse. His face would light up with long suppressed passion as he recounted the tales of unprintable atrocities committed on his people under the guise of Kultur. Well did he know at whose door in Potsdam lay the real blame; whose were the brains which had engineered the wholesale Armenian deportations. Though wounded, Arda felt that he had given more than he had received, and he was eager to meet Fritz again and again on the battlefield.

As for the American-born Sammies—genuine Yankees most of them—they were in France because the honor of their fatherland had been trampled underfoot and they had enlisted in order to right a hideous wrong. Splendid, lovable fellows, all of them, many were mere children in worldly wisdom; a few of the older ones more or less sophisticated. With their strong, though boyish-looking faces, their manifest intelligence and splendid physique, they were the admiration of their French comrades. With the help of a smile, a hand-shake and a cigaret, new and mutually valuable international friendships were soon formed, and it was a joy to see Sammies and Poilus, on a sunny afternoon—rare treats, alas, in this part of France—basking in the sun and carrying out all sorts of impossible conversations in Frankingle or Inglefrank—depending on whether French nouns and verbs were being anglicized or English nouns and verbs were frenchified.

What a liberal education for one and all of them; what a rare opportunity for free exchange of thought! After this hideous war is over, will there evermore be such a thing as a d—d foreigner—at least among the Allies? Will not this great cataclysm which has befallen the civilized world, save the mark, bring about a better understanding among the people who have been gasping and struggling in our great melting pot? If it does, we, at home or in the field, will almost feel repaid for the suffering we are enduring and the sacrifices we are making, in order to see the struggle through to a victorious end.

George de Tarnowsky, France.

Major, M. C., U. S. R.

THE FRAMINGHAM EXPERIMENT IN TUBERCULOSIS

A report on the progress of the Framingham Community Health and Tuberculosis Demonstration has been issued in Monograph 1, Publication 1 of the General Series of publications which will be issued regarding the experiment. It is planned to issue three series of reports, the first a general series covering the program itself, educational, social and economic, a second medical series presenting the results of the health census, medical examination, tuberculin survey, etc., and a third sanitary series covering reports and statistics of sanitary and hygienic conditions among infants, in schools, factories, etc. The demonstration has been in operation a little more than a year, and this first publication gives an account of the foundations which have been laid. The main objectives are summarized as the thorough medical examination of a substantial proportion of the population, the discovery of tuberculosis, and lending assistance to the community in organizing its forces to meet its own health obligations. Under this plan expert examinations have been made of 5,000 persons, about one third of the population, with the object of discovering and placing under treatment and observation incipient, advanced or arrested cases of tuberculosis, of which about 200 have been found; a sanitary survey has been made covering infant conditions, schools, factories, food, milk, rural sanitation, vital statistics, etc.; a health census, a patriotic census of the man power resources of Framingham; a von Pirquet tuberculin survey of children between 1 and 7 years of age; a health camp for children; standards for the diagnosis, classification and treatment of children and adults, domestic science classes and home economic classes, the development of health educational work, etc., have also been among the accomplishments of the first year. The details of each of these divisions of effort will be given in subsequent publications.

Society Proceedings

COMING MEETINGS

American Academy of Ophth. and Oto-Laryn., Denver, Aug. 6-8.
American Ophthalmological Society, New London, Conn., July 9-10.
Idaho State Medical Association, Seattle, July 17-19.
Montana Medical Association, Butte, July 10-11.
New Jersey Medical Society, Spring Lake, June 25-26.
Oregon State Medical Association, Portland, June 27-29.
Southern Minnesota Medical Association, Winona, Minn., June 24-25.
Washington State Medical Association, July 10.
Western Roentgen Society, Colorado Springs, June 27-28.
Wyoming State Medical Society, Casper, Aug. 7.

THE AMERICAN GYNECOLOGICAL SOCIETY

Forty-Third Annual Meeting, held at Philadelphia, May 16-18, 1918

(Concluded from page 1885)

The Bladder of Women After Operation

Dr. Arthur H. Curtis, Chicago: Postoperative catheter cystitis is really urinary tract infection caused by residual vesical urine. An essential feature in the treatment of postoperative cases has been the prevention of urine stagnation in the bladder. In 465 consecutive operations the patients have been managed thus: All who complain of vesical distress are catheterized. Also, even when the power to void urine is present, catheterization is performed if residual urine is suspected. Furthermore, those patients who have required repeated catheterization are thereafter catheterized once daily immediately after urination, as long as residual urine is obtained. At the time of catheterization, 15 c.c. of one-eighth per cent. silver nitrate is instilled before the catheter is withdrawn. Medication consists of hexamethylenamin in amounts sufficient to maintain a positive formaldehyd test. In the presence of alkaline urine, acid sodium phosphate is added. Those who show idiosyncrasy to hexamethylenamin, or whose urine yields no formaldehyd, are treated with alkalis. In the presence of urinary tract infection, meats are permitted only twice a week. Seasonings of all sorts are forbidden, salt excepted. Sugar, sweets and pastry are limited. Under this plan, postoperative bladder troubles have disappeared. Retention of urine is a factor of the utmost importance in the etiology of pregnancy pyelitis. It is urged, therefore, that obstetric patients be tested for residual urine whenever carefully collected specimens reveal pus and bacteria. Through judicious catheterization, immediately after urination, these patients can often be saved from the danger of pyelitis.

DISCUSSION

Dr. John A. Sampson, Albany, N. Y.: After a radical operation for carcinoma of the cervix, severe cystitis is a common complication. I attribute the bladder disturbance to interference with the blood supply and with its function. Some of these patients, in whom there was incidentally a vesicovaginal fistula, were not troubled with cystitis, and I even went so far as to suggest that possibly in these severe cases the formation of a vesicovaginal fistula temporarily would obviate the cystitis. One of the most important ways of treating a severe cystitis is to establish free drainage and rest.

Dr. Guy L. Hunner, Baltimore: I agree that retention of urine is, perhaps, the chief factor, and this is most often due to postoperative overdistention of the bladder. Interference with the circulation and traumatism to the bladder itself do not have an important bearing on the question of postoperative cystitis; but if these patients are allowed to go on after operation with overdistention of the bladder, we may get a partial paresis which may last for several days or weeks, creating a most favorable condition for infection to take place.

Dr. J. Riddle Goffe, New York: I should like to ask about the treatment after washing out the bladder.

Dr. T. J. Watkins, Chicago: We always pass a catheter as soon as the patient has any distress After a patient has been catheterized every two or three days, we also catheterize once a day after that until we are sure she is not carrying an excess of residual urine. Daily catheterization is stopped as soon as we are convinced that the patient is not carrying a large amount of stagnant urine.

Dr. LeRoy Broun, New York: To what extent do you find residual urine, and in what quantity?

Dr. T. J. Watkins, Chicago: We almost invariably find a crippled bladder in women who have had to be catheterized every two or three days. Patients that require catheterization very seldom carry stagnant urine.

Tubal and Ovarian Hemorrhage: Its Etiologic Relation to Pelvic Hematocele and Extra-Uterine Pregnancy

Dr. J. Wesley Bovée, Washington, D. C.: Trauma plays a part in producing these hemorrhages. Hemorrhage from the fallopian tube may occur from general conditions that similarly affect other tissues. Venous stasis from circulatory disturbances or pressure from tumors may reasonably be included in a list of its causes. Ovarian hemorrhage may be confined within the ovary, constituting one or more hematomas, or it may take place into the peritoneal cavity, producing, if abundant, a hematocele. No other organ of the body is so frequently the seat of hemorrhage as is the ovary. Stromal hemorrhage is commonly preceded by infection of the ovary. In but few cases have correct diagnoses been made before operation or necropsy. As to treatment, in the milder forms of the condition rest and anodynes may meet all indications. In the severer forms the same rules apply as are employed in the treatment of ectopic pregnancy.

End-Results of the Conserved Ovary

Dr. John O. Polak, Brooklyn: From a study of seventy-three reoperations on patients in whom one or both ovaries were conserved, we must draw the following conclusions: 1. Routine conservation without due consideration of the ovarian and contiguous pathologic condition as it exists in the individual case, is not good teaching. 2. Regeneration of the conserved ovary depends largely on the type and duration of the existing infection and the condition of the tunica of the individual ovary. 3. Even when the most detailed technic is observed, the ovarian circulation is impaired. 4. The retained ovary, without the uterus, is always a focus for possible trouble. 5. The life history of the retained ovary is of short duration, and the trophic influence of the diseased ovary has been overestimated. Finally, a cured patient has few nervous symptoms.

The Most Effective Methods of Preventing Venereal Diseases

Dr. J. Montgomery Baldy, Philadelphia: Legislation in the line of prohibition has proved a failure. Education has proved a failure. All methods, single and combined, used in the past have driven victims of the diseases to drug store clerks and quacks. The "holier than thou" attitude of the community has been most disastrous. The methods of control which give any promise whatever of success are the open treatment of the whole subject on the basis of sanitation, dealing with these venereal diseases as with any other class of diseases. The community must be taught that the old attitude in regard to these matters is erroneous. Hospitals must be forced to repeal any rules they may have prohibiting the admission of these patients to their wards. Superintendents assuming the attitude of fear of these diseases must be taught to change their attitude in these matters, or be driven out of the business. Hospital staffs must have full liberty of admission of such patients who in their judgment need hospital treatment. Hospitals running dispensaries must open special dispensaries for the treatment of these diseases. All advertisements in public places of a quack nature must be abolished, and in their place must be substituted notices of legitimate clinics at which such sufferers may apply. This class of patients must be taught that their confidence will be kept just as secretly as will their confidence in any other class of disease, and that they are perfectly safe in applying to hospitals for treatment. Hospitals must gradually provide free treatment for those suffering with these diseases who are unable to pay for them. The question of registration by physicians of patients at public boards of health, except in an extremely limited way, the name of the patient being not involved, is, to say the least, indiscreet if results are to be obtained.

Why the Midwife?

Dr. J. Clifton Edgar, New York: Hospital records bear out the fact that foreign-born women, after their first confinement under the care of the midwife, subsequently turn to the maternity hospital or a physician for obstetric aid. After a short residence in this country, the foreign-born woman does not usually persist in the employment of a midwife. Her ambition is eventually to be in a financial position enabling her to employ the services of a regular practitioner. During the existence of the Midwife Bellevue School, 235 midwives have been graduated; 5,125 confinements have been conducted by the pupils, 1,755 in the school, and 3,370 in the patients' homes, with a maternal mortality of 0.7 per cent. Only three patients died in the school itself, a mortality of 0.05 per cent. Six others died after being transferred to Bellevue for operation. The 5,125 patients cared for by the midwives of the Midwife School and in the patients' homes were practically all normal labor cases, as in fetal and maternal dystocia, and in bleeding cases, severe toxemia, and other abnormalities, the patients were sent to the Bellevue Obstetric Service for treatment. As far as the handling of strictly normal labor cases by the midwives go, the results have been excellent. The records indicate that little septic infection has resulted.

A plan for better and safer obstetrics in the outlying rural districts must recognize two main problems: 1. The best practical care of normal patients and, 2, the detection of abnormal patients and their care.

By education and supervision the midwife may be rendered reasonably safe for strictly normal labor, safe even for a minimum of sepsis, or for the prevention of ophthalmia neonatorum; but she is not safe, and no amount of education can fit the material which physicians have been brought in contact with, for the early care of prenatal complications, and maternal and fetal dystocia, which caused most of the infant and maternal mortality. Who should determine what is a strictly normal labor—the midwife? Never! She is incompetent to do so, and only the trained obstetrician can do so. The midwife can never stand on her own responsibility. For safe obstetrics the obstetrician *must* ever perform the prenatal examination and care. He must ever be at hand for the maternal and fetal dystocia of labor and the complications of the postnatal period.

Treatment of Puerperal Blood Stream Infection by Means of Arsphenamin (Arsenobenzol)

Drs. H. A. Miller and S. A. Chalfant, Pittsburgh: We have treated eleven cases of puerperal infection by means of arsphenamin (arsenobenzol) given intravenously, usually in 0.6 gm. doses, as frequently as three or four day intervals, giving from one to four doses. There were no toxic effects other than a mild albuminuria. Seven patients had a streptococcus in the blood stream, and two of them died; two had a gram-negative bacillus; both lived. Two had a negative blood culture, but were classed as cases of bacteremia clinically; both died. Two patients had intra-uterine irrigations with neutral solution of chlorinated soda at two hour intervals. One recovered and one died. In the fatal case, necropsy revealed the uterus free from infection. Death was due to multiple abscesses of both kidneys. With the intravenous injections of arsphenamin we have been able to rid the blood stream of its invading organism in every instance. All varieties of organisms so far encountered seem to be equally influenced. After arsphenamin has been given there is a marked increase in the leukocyte count. If, after this time, there is a decided decrease in the leukocytes, it is possible that the patient has reinfected herself, and arsphenamin should be given without waiting for confirmation of the culture report. The blood stream is usually found to be sterile in twenty-four hours, always in forty-eight hours, except in one case in which only 0.4 gm. of arsphenamin were given. Rabbit experiments indicate that a dose of 6 mg. is necessary to secure prompt results. In suspected blood stream infections, arsphenamin may be given immediately after a culture has been taken in order to avoid the delay incident to waiting for a laboratory report.

Two Hundred and Ten Fibroid Tumors Treated by Radium

Dr. Howard A. Kelly, Baltimore: Radium treatment, which is without danger and which is found effective in 93 per cent. of the cases, should be preferred to operation, which is, after all, a major operation of mutilating character offering considerable risk to life and health. The accomplishments of radium in this class of cases are: 1. Control of hemorrhage and checking of menstruation. 2. The shrinkage of the tumors. 3. In many instances the disappearance of the tumors. 4. In some cases, even after two years, the return of menstruation, either normal or scanty. There has been no mortality associated with the treatment of 210 consecutive cases. In 182 cases the results are known. In 171 radium alone was sufficient to relieve the patient. The tumor was either gone or markedly diminished, or the patient was symptomatically well. In five of the remaining eleven cases, some complicating condition was present (ovarian cyst, gallstones, calcified uterus); in two cases operation was preferred to further treatment; in three cases operation was found not to have been necessary, as the tumor had decreased under treatment; one case proved resistant to prolonged treatment. Nine of the eleven patients were operated on. If radium fails, the operation has simply been postponed without detriment to the patient. Menopausic symptoms are usually not severe. In 50 per cent. of the cases, no menopausic symptoms are complained of; in slightly more than 25 per cent. they are moderate and in slightly less than 25 per cent. they are marked.

Cancer of the Cervix Complicating Triplet Pregnancy

Dr. Benjamin P. Watson, Toronto: In a quintipara, aged 30, a large cauliflower carcinoma was found growing from the anterior lip of the vaginal portion of the cervix. The abdomen was opened, the uterus incised, and three 5-month fetuses removed, and then three separate placentas connected by membrane. A Wertheim operation was done. The patient made a good recovery.

The Graduate Degree in Obstetrics and Gynecology

Dr. Jennings C. Litzenberg, Minneapolis: The Minnesota plan for graduate work in the medical specialties is new, but new only in its application to medicine. The plan simply applies the principles governing university graduate work in any other branch of advanced learning to the medical branches, and places them not only under the same principles but actually in the graduate school of the university. The requirements for entry are a college degree, a medical degree, a thorough reading knowledge of French and German, and an internship of at least one year. The course extends over three years of work with a major and a minor, the same as for candidates for other advanced degrees, and examinations are held by a graduate faculty. A thesis, which must be an original contribution to science, is required and must be defended. This leads to the degree of Doctor of Philosophy in Obstetrics and Gynecology. A two years' course may lead to Master of Science. It is a plan to raise to a high level the training of specialists.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Twelfth Annual Meeting, held at Albany, May 21-23, 1918

The President, Dr. Alexander Lambert, in the Chair

Diagnosis of Nephritis

Dr. Albert A. Epstein, New York: A diagnosis of nephritis is confronted with two distinct problems: First, the determination of the pathologic processes involved, and, second, the evaluation of the kidney function. An accurate diagnosis of nephritis, therefore, entails a circumspect and complete analysis of all the morbid conditions present; the probable etiologic factors involved, the disturbance in function and other disorders which arise therefrom. To regard nephritis as an independent condition is a fallacy. The problem in the diagnosis of acute nephritis is essentially different from that of chronic nephritis. A consideration of the etiologic factors involved is very important; they are usually bacteria or their toxins, or, as I believe to be the case with certain subacute types, constitutional disorders of metabolic or endocrine origin. The existence of acute nephritis, excepting of course the chemical nephritides and the types occurring in pregnancy, point usually to an antecedent infection. But renal disorders with urinary signs frequently occur in febrile diseases of all kinds, which do not represent true nephritis, and thus the problem of differentiation often arises. In the latter group of cases the signs usually are not so pronounced. There is an albuminuria, at times, with casts. Functional disorders also arise. But there is not, as a rule, that marked evidence of renal involvement such as is found in the true cases of nephritis, nor does the disturbance last much beyond the duration of the febrile state. The difference is, perhaps, arbitrary and only one of degree. In the matter of chronic nephritis, the problem of etiology as a source of information is much more difficult. No doubt in a certain number of cases a history of acute nephritis or recurring infections may be elicited, and a diagnosis made; but the connection between the two is not always clear. Chronic poisoning, tuberculosis or syphilis may be contributory factors and require consideration in the diagnosis. There is one difficulty that presents itself from the clinical side in investigating the question of the connection between acute, subacute and chronic nephritis, and that is, that acute and subacute nephritis may appear without the development of symptoms other than the urinary signs during any infection. Furthermore, in the chronic nephropathies it is the possibility and the frequent occurrence of compensatory processes that create difficulty in arriving at a diagnosis. This is particularly true when the question is viewed from the functional standpoint. In the application of functional tests in the diagnosis of nephritis, two points should be borne in mind, namely, that a number of the different functional tests should be made and that they should be repeated in each and every case. As a prerequisite to the proper interpretation of the results obtained by functional tests, extrarenal factors that are capable of modifying or influencing them should be excluded.

Congenital Hydronephrosis

Dr. John T. Geraghty, Baltimore: There is a group of cases which has been puzzling practitioners for years. I refer principally to so-called primary hydronephrosis. The term "primary" has been used in these cases because there has been no etiologic factor that can be determined easily as the cause of this hydronephrosis. Many of the cases have been considered congenital, and until recently physicians have been of the opinion that most of the cases in which we can actually determine any cause for the extreme process are congenital. Recent studies, however, have shown that we are wrong. Two types of aberrant vessels are most apt to cause hydronephrosis. In one instance the vessels arise from the aorta behind the ureter and enter into the lower surface of the kidney at its lower pole. In the second case the vessel arises from the vena cava, crosses the anterior surface of the ureter, and enters the posterior surface of the kidney. These two conditions give rise to a condition that produces obstruction. In a series of fifteen cases, I was able to find aberrant vessels as the cause of hydronephrosis in only two. The vessel crossed at the ureteropelvic junction. Marked kinking of the ureter or pressure of a vessel crossing over the ureter is not sufficient to produce hydronephrosis. However, in some cases of unusual mobility in which the kidney drops down over the aberrant vessel, that vessel may play an important rôle. Even though aberrant vessels are found, it is well to bear in mind that may not be the primary cause. There may be other factors that play a causal rôle. Renal mobility is put forward as a common cause, and most urologists give it first place. In my experience it has been the most common cause of hydronephrosis.

In a series of fifteen cases, nephrectomy was performed in ten. In three cases plastic procedures were carried out, and in two cases aberrant vessels were divided. In a study of these ten cases, with one exception there was found at the ureteropelvic juncture, or in the upper part of the ureter, an inflammatory infiltrate. Most of these cases were considered congenital beforehand, but sections through the ureter in studying the pelvis showed varying amounts of infiltration.

The diagnosis of hydronephrosis is not difficult. It is possible to make a diagnosis of hydronephrosis by pyelography and to demonstrate the exact point where the hydronephrosis begins. In most cases the kidney is destroyed when the patient is first seen. At any rate, it is either badly infected or the kidney is destroyed. Nephrectomy is the proper treatment.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Insanity, Baltimore

April, 1918, 74, No. 4

1 Psychiatric Family Studies. A. Myerson, Boston.—p. 497.
2 *Examination of Regiment, U. S. Army, for Nervous and Mental Diseases. K. M. Bowman.—p. 555.
3 Impulsive Acts in Particular Form of Swallowing Foreign Objects, as Met with Among Insane. A. W. Hoisholt, San Francisco. —p. 569.
4 Drink and Its Control in Relation to Work and Health in Great Britain. R. A. Jones.—p. 579.
5 Study of Cases of Manic Depressive Psychosis Arising After Age of Forty. R. L. Whitney, Waverly, Mass.—p. 587.
6 Value of Outpatient Work Among Insane. A. W. Stearns, Boston. —p. 595.
7 *Results in Treatment of Paresis by Inunctions of Mercury and Drainage of Cerebrospinal Fluid. A. D. Finlayson, Warren, Pa. —p. 603.
8 Influence of Wars on Psychology of Times. C. K. Mills, Philadelphia.—p. 625.
9 Receiving Unit of State Hospital at Howard, Rhode Island. A. H. Harrington.—p. 635.
10 Sociologic, Neurologic, Serologic and Psychiatrical Study of Group of Prostitutes. J. Don Ball and H. G. Thomas, Oakland, Calif.—p. 647.
11 So-Called Lucid Interval in Manic Depressive Psychoses. Its Medicolegal Value. A. Gordon, Philadelphia.—p. 667.

2. Examination of Regiment in Army for Nervous and Mental Diseases.—In all, 1,189 cases were examined. There were 647 cases, or 54.5 per cent., negative in every way; 542 cases, or 45.6 per cent., showed positive findings; 117 cases gave positive family histories of nervous and mental disorder, and in 40 of these cases all other findings were negative. There were 57 cases which gave positive personal histories of nervous and mental disorder, and in none of these cases were all other findings negative; 475 cases positive findings from the neurologic and mental examination and in 367 of these cases all other findings were negative. The 117 cases of positive family histories afforded the following data: Nervousness, 54, in which 37 were of the mother, 5 of the father, 6 of one brother or sister, 6 of two or more brothers and sisters. Fainting attacks, 10, in which 2 were of the mother, 2 of the father, 3 of one brother or sister, 2 of two or more brothers and sisters, 1 of grandparent. Epilepsy, 19, in which 3 were of the mother, 2 of the father, 10 of one brother or sister, 2 of two or more brothers and sisters, 2 of uncle or aunt. Goiter, 23, in which 8 were of the mother, 2 of the father, 13 of one brother and sister. Insanity, 5, in which 4 were of the mother, 1 of one uncle or aunt. Chorea, 3, in which 2 were of one brother or sister and 1 of one uncle or aunt. Miscellaneous, 3. The 57 cases of positive personal histories yielded the following: nervousness, 39; fainting attacks, 4; epilepsy, 8; chorea, 4; miscellaneous, 2.

The 475 cases with positive neurologic and mental findings ran as follows: 69 cases showed sufficient evidence of mental deviation to warrant further examination; 59 of these were classed as possible mental defectives, 15 of whom were negative in every other way; 10 were classed as possibly unstable emotionally. Only a few of the most important neurologic findings need be given: 71 cases showed the presence of several stigmata of degeneration; 112 cases showed pupillary changes; 93 cases showed thyroid changes; 108 cases showed knee-jerk changes; 126 cases showed the presence of tremors; 106 cases showed tremors of the fingers; 14 cases showed a slight stuttering or stammering; 35 cases showed combination of alteration of pupils and alterations of jerks and tremors. In the second examination, 144 cases were studied. The Wassermann test was done on 47 of these cases; the Binet test in 25; 27 were recommended for discharge. The diagnoses in these cases were as follows: defective mental development, 6; defective mental development and epilepsy, 3; defective mental development and constitutional inferiority, 3; defective mental development and constitutional inferiority with psychosis, 3; chorea, 3; exophthalmic goiter, 3, and exophthalmic goiter and defective mental development, 1.

7. Treatment of Paresis by Mercury.—Fourteen paretics, who had been showing symptoms from nine months to several years, received daily inunctions of mercurial ointment, 50 per cent. Every tenth day a lumbar puncture was made and from 20 c.c. to 40 c.c. of fluid withdrawn, the amount depending on the pressure and the rapidity of the flow. A Wassermann reaction was done, using the blood serum; a globulin test, cell count, Lange's colloidal gold test, Wassermann reaction and a chemical test to determine the presence of mercury were done, using the fluid. In seven, or 50 per cent., of the cases the blood Wassermann became negative and remained so for varying periods of time; one case had a negative blood at the time of admission and it remained so throughout the period of observation. In six, or 43 per cent., of the cases the spinal fluid became negative and remained so for varying periods of time. In no instance did the blood or spinal fluid become negative and remain so. All cases had negative globulin tests at one or more examinations; but, with the exception of one case, more positives than negatives were obtained. The cell count showed an irregular decrease in all instances. In four, or 28 per cent., of the cases the colloidal gold became negative, that is, was neither paretic nor syphilitic in type, but all showed "paretic curves" at some later examination. After fifteen months' treatment a trace of mercury was found in 500 c.c. of grouped spinal fluids. No mercury was found on previous examinations. One case showed a good remission mentally, but all the serologic findings remained strongly positive. Another case did not improve quite as much, but approached a state termed a remission, and has shown some negative serologic findings. The remaining twelve cases showed no greater mental or physical changes than would be found in a similar group of untreated cases. Finlayson emphasizes the fact that the lack of correlation between the serologic findings and mental conditions leaves little ground on which to base definite conclusions as to the value of the treatment.

American Journal of Physiology, Baltimore

May, 1918, 46, No. 2

12 *Regulation of Renal Activity. Regulation of Urea Excretion by Epinephrin. T. Addis, G. D. Barnett and A. E. Shevky, San Francisco.—p. 39.

13 *Id. Regulation of Urea Excretion by Pituitary Extract. T. Addis, G. D. Barnett and A. E. Shevky, San Francisco.—p. 52.
14 Activation of Muscle Catalase by Liver. T. C. Burnett, San Francisco.—p. 63.
15 *Muscular Strength and Muscular Symmetry in Human Beings. E. G. Martin, Boston.—p. 67.
16 *Regulation of Renal Activity. Effect of Epinephrin and Pituitary Extract on Action of Kidney Under Strain. T. Addis, M. G. Foster and G. D. Barnett, San Francisco.—p. 84.
17 Relation of Suprarenals to Piqûre Hyperglycemia and to Glycogen Content of Liver. G. N. Stewart and J. M. Rogoff, Cleveland. —p. 90.
18 *Normal Mechanism for Control of Oxidation in Body. W. E. Burge and A. J. Neill, Urbana, Ill.—p. 117.

12. **Regulation of Urea Excretion by Epinephrin.**—The authors found that the subcutaneous injection of epinephrin is followed by an increase in the urea excreting activity of the rabbit's kidney. There is a certain amount of epinephrin which produces the greatest increase in function. Smaller amounts have less and less effect until there is no change from the normal. With larger amounts the augmenting effect on secretion also becomes less until, with relatively large doses the reverse effect of a decrease in function is found. Except with these large amounts the rate of urea excretion is more rapid than in animals not given epinephrin in spite of a lowering of the blood urea concentration.

13. **Regulation of Urea Excretion by Pituitary Extract.**—The subcutaneous injection of pituitary extract was followed in all effective amounts by a decrease in the urea excreting activity of the rabbit's kidney. The rate of urea excretion is slower than in animals not given pituitary extract, although the blood urea concentration is higher.

15. **Muscular Strength and Muscular Symmetry in Man.**—Strength tests by means of a spring balance method were made by Martin on 240 children between the ages of 5 and 18 years. The average percentage distribution of the strength among the muscles of the body was determined for each age. These percentage distributions are proposed as standards of muscular symmetry in children.

16. **Effect of Epinephrin and Pituitary Extract on Action of Kidney Under Strain.**—At high blood urea concentrations the degree of change in the urea excreting activity of the kidney produced by epinephrin and by pituitary extract is less than at low blood urea concentrations.

18. **Mechanism for Control of Oxidation in Body.**—Burge and Neill state that ingestion of the foodstuffs increases the catalase of the blood and hence of the tissues parallel with the increase in heat production. The increase in catalase is due mainly to the stimulating effect of the absorbed foodstuffs on the liver. The ingestion of protein, in keeping with its greater stimulating effect on heat production, produces a greater increase in catalase than fat or carbohydrate. After the removal of the liver from the body of an animal, the liver cells continue to liberate catalase for about two hours, due presumably to the stimulating effect of the dextrose formed from the glycogen.

American Journal of Public Health, Boston

May, 1918, 8, No. 5

19 History of American Public Health Association. P. H. Bryce, Ottawa.—p. 327.
20 Public Health Publicity and Education Through Public Schools. I. S. Wile, New York.—p. 336.
21 Publicity in Health Matters a Public Right. O. Dowling. New Orleans.—p. 341.
22 Public Health Education and Family Magazine. C. E. Terry and F. Schneider, Jr., New York.—p. 345.
23 Service of State Public Health Laboratories in Time of War. H. Albert, Iowa City, Iowa.—p. 349.
24 Control of Typhoid in Chicago. H. Spalding and H. N. Bundesen, Chicago.—p. 358.
25 Practical Standards for Factory Illumination. L. B. Marks, New York.—p. 363.
26 Effect of War on Production of Garbage and Methods of Disposal. I. S. Osborn.—p. 368.
27 Practical Aspects of Dehydrated Foods. L. P. Brown, New York. —p. 372.
28 Physical Preparedness. G. B. Young, Norfolk, Va.—p. 375.

American Journal of Syphilis, St. Louis

April, 1918, 2, No. 2

29 Syphilis of Stomach; Report of Forty Cases. G. B. Eusterman, Rochester, Minn.—p. 205.
30 Syphilis at Pyloric Sphincter of Stomach. P. Eisen, Chicago.—p. 220.
31 Some Differential Points Between Cancer and Syphilis of Stomach. G. M. Niles, Atlanta, Ga.—p. 222.
32 Syphilis of Lungs. M. F. Morris, Jr., Chelsea, Mass.—p. 231.
33 Leukoplakia of Tongue. D. W. Montgomery, San Francisco.—p. 237.
34 Syphilis of Inner Ear and Eighth Nerve. G. W. MacKenzie, Philadelphia.—p. 241.
35 History of Cerebrospinal Fluid. A. Levinson, Chicago.—p. 267.
36 Parasitology and Serology of Syphilis. A. Keidel, Baltimore. —p. 276.
37 Preparation of Colloidal Gold Solution. J. H. Black and L. Rosenberg, Dallas, Texas.—p. 288.
38 Bruck's Nitric Acid Test. H. J. Farbach, Louisville, Ky.—p. 292.
39 Roentgenology of Syphilis. R. D. Carman, Rochester, Minn. —p. 297.
40 Diagnosis and Treatment of Syphilis in Men. H. Goodman, New York.—p. 344.
41 Early Syphilis as Public Health Problem. W. J. Heimann, New York.—p. 365.

Georgia Medical Association Journal, Augusta

May, 1918, 8, No. 1

42 Army in Relation to Tuberculosis Problem. G. E. Bushnell. —p. 1.
43 Some Principles Involving Treatment of Infected Wounds. J. C. Bloodgood.—p. 9.

Journal of Biological Chemistry, Baltimore

May, 1918, 34, No. 2

44 Method for Detecting Small Quantities of Chloretone (Trichlorotertiarybutyl Alcohol) in Aqueous Solutions. T. B. Aldrich, Detroit.—p. 263.
45 Suprarenals in Relation to Carbohydrate Metabolism. Influence of Repetition of Epinephrin Injection on Intensity of Glycosuria and Hyperglycemia and Glycogen Content of Liver. S. Kuriyama, New Haven, Conn.—p. 269.
46 Id. Influence of Suprarenalectomy on Glycogenetic Power of Liver. S. Kuriyama, New Haven, Conn.—p. 287.
47 Id. Epinephrin Content of Suprarenals in Various Experimental Conditions. S. Kuriyama, New Haven, Conn.—p. 299.
48 Physiologic Behavior of Raffinose. S. Kuriyama, New Haven, Conn.—p. 321.
49 *Blood Dextrose as Affected by Morphin and Morphin with Ether Anesthesia. E. L. Ross, Chicago.—p. 335.
50 Determination of Various Forms of Nitrogen in Bovine Flesh, Including Products of Hydrolysis of Some of Proteins. Hexone Bases of Some Flesh Proteins. W. E. Thrun and P. F. Trowbridge, Columbia, Mo.—p. 343.
51 Id. Bromination of Hydrolysates of Some Beef Flesh Proteins. W. E. Thrun and P. F. Trowbridge, Columbia, Mo.—p. 355.
52 Basis of Measurement of Antagonism. W. J. V. Osterhout, Cambridge, Mass.—p. 363.
53 Determination of Hemoglobin During Infancy by Palmer and Van Slyke Methods. V. B. Appleton, New York.—p. 369.
54 Monthly Metabolism of Nitrogen, Phosphorus and Calcium in Healthy Women. H. C. Sherman, L. H. Gillett and H. M. Pope, New York.—p. 373.
55 Nutritive Value of Maize Protein and on Phosphorus and Calcium Requirements of Healthy Women. H. C. Sherman, L. Wheeler and A. B. Yates, New York.—p. 383.
56 Influence of Neutral Salts on Viscosity of Gelatin Solutions. J. Loeb, New York.—p. 395.
57 Effects of Electrolytes on Gelatin and Their Biologic Significance. W. O. Fenn, Boston.—p. 415.
58 *Stizolobin, Globulin of Chinese Velvet Bean, Stizolobium Niveum. C. O. Johns and A. J. Finks, Washington, D. C.—p. 429.
59 Globulin of [illegible] Fagopyrum Fagopyrum. C. O. Johns and L. H. [illegible] D. C.—p. 439.
60 *Production of [illegible] Salts. W. Salant and L. E. Wise, Washington, D. C.—p. 447.
61 Distribution and Elimination of Zinc and Tin in Body. W. Salant, J. B. Rieger and E. L. P. Treuthardt, Washington, D. C.—p. 463.

49. **Effect of Morphin and Ether on Blood Dextrose.**—A series of animals was subjected to the action of morphin injected subcutaneously and ether administered in an air mixture. These drugs were applied alone and together and in different orders. Blood dextrose determinations were made at various intervals. The data obtained lead Ross to the following conclusions: 1. Morphin administered hypodermically to dogs in doses of 10 mg. per kilogram of animal produced an average increase of 59 per cent. in the blood sugar in half an hour, 66 per cent. in 45 minutes, and 77 per cent. in an hour and a half. 2. Ether, given after morphin has been acting for half an hour, does not cause as much increase in blood sugar as if the morphin had not been used. However, the final degree of hyperglycemia is approximately the same, either with or without morphin.

58. **Stizolobin, Globulin of Chinese Velvet Bean.**—The globulin of the Chinese velvet bean has been isolated by Johns and Finks and analyzed. This protein has been named stizolobin. The basic amino acids in stizolobin have been determined by the method of Van Slyke. Analyses indicate that stizolobin contains all the basic amino acids known to exist in proteins. The lysin content is 8.27 per cent. of the protein. Tryptophane is also present. The free amino nitrogen in stizolobin has been found equal to very nearly one half of the lysin nitrogen as determined by the Van Slyke method.

60. **Glycosuria and Zinc Salts.**—The essential facts established by Salant and Wise are as follows: When zinc malate was injected intravenously into rabbits, glycosuria and hyperglycemia appeared, the presence of sugar in the urine as well as its increased amount in the blood being observed in well fed and in fasting animals; when sucrose was fed glycosuria was produced more easily. Glycosuria was also produced by subcutaneous injections and after the administration of zinc malate or acetate per os, but much larger doses were required. The amount of sugar in the urine was never large, being usually about 0.35 per cent., or less, in rabbits, but much larger averages were found in the urine of cats. Albuminuria, which in some cases became very pronounced, was likewise observed after administration of zinc salts, and it appeared either simultaneously with or before the glycosuria and lasted sometimes until the animal died. The duration of the glycosuria was about one to four days and also appeared irregularly in some experiments. Glycosuria, as well as albuminuria, was frequently absent in carrot-fed rabbits. When calcium chlorid was injected intravenously, immediately after or before zinc malate, glycosuria was slightly increased. The rate of secretion of urine was either diminished or remained unchanged after the administration of zinc salts. In a few cases only was the amount of urine augmented after the zinc. It appears, therefore, that some of the effects produced by zinc salts are analogous to those caused by the administration of other heavy metals.

Journal of Cancer Research, Baltimore

April, 1918, 3, No. 2

62 Cancerous Diseases in Norway. F. G. Gade.—p. 107.
63 *Some Phases of Radium Action with Special Reference to Hematopoietic System. J. A. P. Millet and T. Mueller, New York.—p. 127.
64 *Influence of Heat and Radium on Induced Immunity against Transplanted Animal Tumors. G. L. Rohdenburg and F. D. Bullock, New York.—p. 181.
65 *Fluctuations in Growth Energy of Malignant Tumors in Man, with Especial Reference to Spontaneous Recession. G. L. Rohdenburg, New York.—p. 193.

63. **Action of Radium on Hematopoietic System.**—The blood of ten cases of squamous cell carcinoma of the cervix uteri and vagina has been studied by Millet and Mueller in order to ascertain the immediate and remote effect of radium and roentgen-ray treatments on the formed elements of the blood. They found that the immediate effects of radium on the blood are not altered qualitatively by previous roentgen-ray or radium treatments, although the quantitative action may be somewhat diminished during a second treatment. The remote effects of radium on the blood are essentially similar to the effects of combined roentgen-ray and radium treatment. Individual slight differences in response to radium applications are often noted to occur again on a second application in the same individual. The immediate effects of radium on the blood are the following: (*a*) An immediate drop in total white count, reaching its maximum from one half to six hours after the application. (*b*) A return of the total white count to its former level within twenty-four hours after the application, usually within the first twelve hours. (*c*) An occasional secondary rise of the total white count to a point well above its original level from twelve hours to three days after the application. (*d*) A close adherence of the total polymorphonuclear count to the curve of the total white count. (*e*) An absence of characteristic changes in the total lymphocyte and total large mononuclear counts. (*f*) A tendency of the total lymphocyte count to follow in some degree the fluctuations of the total white count, especially when these are marked. This effect is not constant (*g*) A tendency of the relative lymphocyte count to drop, and of the polymorphonuclears to rise during the course of treatment. This tendency is reversed during the period immediately following the removal of the radium.

Remote effects of radium treatment on the blood are as follows: (*a*) Early. 1. Fall in lymphocyte count from two to four weeks after treatment, sometimes lasting till the end of the second month. 2. Fall in polymorphonuclears after treatment, sometimes simultaneous with the fall in lymphocytes but usually coming later and being less striking. 3. An attempt of the lymphocytes to recuperate, as shown by a rise in most cases at some later date, varying from three to nineteen weeks after treatment, to the approximate level seen before treatment. (*b*) Late. 1. Change in the relative counts as the patient's resistance weakens, with increase in polymorphonuclears and decrease of lymphocytes, but without leukocytosis. 2. Terminal leukocytosis, due in the main to increase of the absolute polymorphonuclear count, although usually accompanied by an absolute decrease in lymphocytes.

64. **Heat and Radium Action on Immunity Against Transplanted Animal Tumors.**—None of the results obtained by Rohdenburg and Bullock in their experimental work lead in any way to the conclusion that the improvement described in human cancer under radium treatment is due to the stimulation of autologous cells, or that benefit is to be expected by radiumization and previous or subsequent injection of homologous lymphoid tissue. Even though the tumors employed in the experiments had been cured, the results could not have been transferred to man, where the problem is to cure a spontaneous (as distinguished from a transplanted) neoplasm.

65. **Fluctuations in Growth Energy of Malignant Tumors.**—The literature of cancer is rich in reports of the recession of malignant tumors after one or another type of medical treatment, the particular therapeutic procedure which is supposed to have brought about the recession in each case being at once hailed as a "cure," only to give rise to failure and disappointment when tried out on a large group of cases. It is probable, therefore, that the isolated cases referred to are really spontaneous recessions and not therapeutic cures. With the idea of emphasizing the frequency of variations in the growth energy of human tumors, and at the same time of seeking further facts bearing on these variations in proliferative activity, the cases of marked recession or spontaneous cure recorded in the literature have been summarized by Rohdenburg, additional cases added, and the entire material subjected to analysis from the standpoint of his present knowledge of experimental cancer. It is concluded that recession of a malignant growth can occur in either sex, at any age period, with any type of malignant tumor, and irrespective of the location of the growth. It occurs after a variety of conditions, a proof that no particular one is specific, and it is very probable that all the conditions noted are preliminary, so to speak, and act by depressing the proliferative energy of the malignant cell until the defensive forces of the body (cytotoxins, cytolysins) are able to accomplish the final destruction. It appears that the most efficacious of all the many conditions which can bring about regressive change is heat, applied from without or occurring under the limited conditions of long duration and comparatively low degree. Including three personal observations recorded in this paper, Rohdenburg has been able to collect a total of 302 cases in which recession, either temporary or permanent, has occurred in a malignant growth. The chief lesson to be learned from the summary of cases here presented is that occasionally, perhaps with greater frequency than is ordinarily imagined, a malignant tumor will spontaneously recede. That such a regression does ever occur suggests that there may be found some method of bringing it about at will, even though this cannot be accomplished at the present time. Rohdenburg says that the occurrence of partial or complete spontaneous recession should make one very critical in judging new therapeutic procedures, that they may not be credited falsely with the results produced by forces of the nature of which we are for the present entirely ignorant.

13 *Id. Regulation of Urea Excretion by Pituitary Extract. T. Addis, G. D. Barnett and A. E. Shevky, San Francisco.—p. 52.
14 Activation of Muscle Catalase by Liver. T. C. Burnett, San Francisco.—p. 63.
15 *Muscular Strength and Muscular Symmetry in Human Beings. E. G. Martin, Boston.—p. 67.
16 *Regulation of Renal Activity. Effect of Epinephrin and Pituitary Extract on Action of Kidney Under Strain. T. Addis, M. G. Foster and G. D. Barnett, San Francisco.—p. 84.
17 Relation of Suprarenals to Piqûre Hyperglycemia and to Glycogen Content of Liver. G. N. Stewart and J. M. Rogoff, Cleveland. —p. 90.
18 *Normal Mechanism for Control of Oxidation in Body. W. E. Burge and A. J. Neill, Urbana, Ill.—p. 117.

12. **Regulation of Urea Excretion by Epinephrin.**—The authors found that the subcutaneous injection of epinephrin is followed by an increase in the urea excreting activity of the rabbit's kidney. There is a certain amount of epinephrin which produces the greatest increase in function. Smaller amounts have less and less effect until there is no change from the normal. With larger amounts the augmenting effect on secretion also becomes less until, with relatively large doses the reverse effect of a decrease in function is found. Except with these large amounts the rate of urea excretion is more rapid than in animals not given epinephrin in spite of a lowering of the blood urea concentration.

13. **Regulation of Urea Excretion by Pituitary Extract.**—The subcutaneous injection of pituitary extract was followed in all effective amounts by a decrease in the urea excreting activity of the rabbit's kidney. The rate of urea excretion is slower than in animals not given pituitary extract, although the blood urea concentration is higher.

15. **Muscular Strength and Muscular Symmetry in Man.**—Strength tests by means of a spring balance method were made by Martin on 240 children between the ages of 5 and 18 years. The average percentage distribution of the strength among the muscles of the body was determined for each age. These percentage distributions are proposed as standards of muscular symmetry in children.

16. **Effect of Epinephrin and Pituitary Extract on Action of Kidney Under Strain.**—At high blood urea concentrations the degree of change in the urea excreting activity of the kidney produced by epinephrin and by pituitary extract is less than at low blood urea concentrations.

18. **Mechanism for Control of Oxidation in Body.**—Burge and Neill state that ingestion of the foodstuffs increases the catalase of the blood and hence of the tissues parallel with the increase in heat production. The increase in catalase is due mainly to the stimulating effect of the absorbed foodstuffs on the liver. The ingestion of protein, in keeping with its greater stimulating effect on heat production, produces a greater increase in catalase than fat or carbohydrate. After the removal of the liver from the body of an animal, the liver cells continue to liberate catalase for about two hours, due presumably to the stimulating effect of the dextrose formed from the glycogen.

American Journal of Public Health, Boston

May, 1918, 8, No. 5

19 History of American Public Health Association. P. H. Bryce, Ottawa.—p. 327.
20 Public Health Publicity and Education Through Public Schools. I. S. Wile, New York.—p. 336.
21 Publicity in Health Matters a Public Right. O. Dowling. New Orleans.—p. 341.
22 Public Health Education and Family Magazine. C. E. Terry and F. Schneider, Jr., New York.—p. 345.
23 Service of State Public Health Laboratories in Time of War. H. Albert, Iowa City, Iowa.—p. 349.
24 Control of Typhoid in Chicago. H. Spalding and H. N. Bundesen, Chicago.—p. 358.
25 Practical Standards for Factory Illumination. L. B. Marks, New York.—p. 363.
26 Effect of War on Production of Garbage and Methods of Disposal. I. S. Osborn.—p. 368.
27 Practical Aspects of Dehydrated Foods. L. P. Brown, New York. —p. 372.
28 Physical Preparedness. G. B. Young, Norfolk, Va.—p. 375.

American Journal of Syphilis, St. Louis

April, 1918, 2, No. 2

29 Syphilis of Stomach; Report of Forty Cases. G. B. Eusterman, Rochester, Minn.—p. 205.
30 Syphilis at Pyloric Sphincter of Stomach. P. Eisen, Chicago.—p. 220.
31 Some Differential Points Between Cancer and Syphilis of Stomach. G. M. Niles, Atlanta, Ga.—p. 222.
32 Syphilis of Lungs. M. F. Morris, Jr., Chelsea, Mass.—p. 231.
33 Leukoplakia of Tongue. D. W. Montgomery, San Francisco.—p. 237.
34 Syphilis of Inner Ear and Eighth Nerve. G. W. MacKenzie, Philadelphia.—p. 241.
35 History of Cerebrospinal Fluid. A. Levinson, Chicago.—p. 267.
36 Parasitology and Serology of Syphilis. A. Keidel, Baltimore. —p. 276.
37 Preparation of Colloidal Gold Solution. J. H. Black and L. Rosenberg, Dallas, Texas.—p. 288.
38 Bruck's Nitric Acid Test. H. J. Farbach, Louisville, Ky.—p. 292.
39 Roentgenology of Syphilis. R. D. Carman, Rochester, Minn. —p. 297.
40 Diagnosis and Treatment of Syphilis in Men. H. Goodman, New York.—p. 344.
41 Early Syphilis as Public Health Problem. W. J. Heimann, New York.—p. 365.

Georgia Medical Association Journal, Augusta

May, 1918, 8, No. 1

42 Army in Relation to Tuberculosis Problem. G. E. Bushnell. —p. 1.
43 Some Principles Involving Treatment of Infected Wounds. J. C. Bloodgood.—p. 9.

Journal of Biological Chemistry, Baltimore

May, 1918, 34, No. 2

44 Method for Detecting Small Quantities of Chloretone (Trichlorotertiarybutyl Alcohol) in Aqueous Solutions. T. B. Aldrich, Detroit.—p. 263.
45 Suprarenals in Relation to Carbohydrate Metabolism. Influence of Repetition of Epinephrin Injection on Intensity of Glycosuria and Hyperglycemia and Glycogen Content of Liver. S. Kuriyama, New Haven, Conn.—p. 269.
46 Id. Influence of Suprarenalectomy on Glycogenetic Power of Liver. S. Kuriyama, New Haven, Conn.—p. 287.
47 Id. Epinephrin Content of Suprarenals in Various Experimental Conditions. S. Kuriyama, New Haven, Conn.—p. 299.
48 Physiologic Behavior of Raffinose. S. Kuriyama, New Haven, Conn.—p. 321.
49 *Blood Dextrose as Affected by Morphin and Morphin with Ether Anesthesia. E. L. Ross, Chicago.—p. 335.
50 Determination of Various Forms of Nitrogen in Bovine Flesh, Including Products of Hydrolysis of Some of Proteins. Hexone Bases of Some Flesh Proteins. W. E. Thrun and P. F. Trowbridge, Columbia, Mo.—p. 343.
51 Id. Bromination of Hydrolysates of Some Beef Flesh Proteins. W. E. Thrun and P. F. Trowbridge, Columbia, Mo.—p. 355.
52 Basis of Measurement of Antagonism. W. J. V. Osterhout, Cambridge, Mass.—p. 363.
53 Determination of Hemoglobin During Infancy by Palmer and Van Slyke Methods. V. B. Appleton, New York.—p. 369.
54 Monthly Metabolism of Nitrogen, Phosphorus and Calcium in Healthy Women. H. C. Sherman, L. H. Gillett and H. M. Pope, New York.—p. 373.
55 Nutritive Value of Maize Protein and on Phosphorus and Calcium Requirements of Healthy Women. H. C. Sherman, L. Wheeler and A. B. Yates, New York.—p. 383.
56 Influence of Neutral Salts on Viscosity of Gelatin Solutions. J. Loeb, New York.—p. 395.
57 Effects of Electrolytes on Gelatin and Their Biologic Significance. W. O. Fenn, Boston.—p. 415.
58 *Stizolobin, Globulin of Chinese Velvet Bean, Stizolobium Niveum. C. O. Johns and A. J. Finks, Washington, D. C.—p. 429.
59 Globulin of Buckwheat, Fagopyrum Fagopyrum. C. O. Johns and L. H. Chernoff, Washington, D. C.—p. 439.
60 *Production of Glycosuria by Zinc Salts. W. Salant and L. E. Wise, Washington, D. C.—p. 447.
61 Distribution and Elimination of Zinc and Tin in Body. W. Salant, J. B. Rieger and E. L. P. Treuthardt, Washington, D. C.—p. 463.

49. **Effect of Morphin and Ether on Blood Dextrose.**—A series of animals was subjected to the action of morphin injected subcutaneously and ether administered in an air mixture. These drugs were applied alone and together and in different orders. Blood dextrose determinations were made at various intervals. The data obtained lead Ross to the following conclusions: 1. Morphin administered hypodermically to dogs in doses of 10 mg. per kilogram of animal produced an average increase of 59 per cent. in the blood sugar in half an hour, 66 per cent. in 45 minutes, and 77 per cent. in an hour and a half. 2. Ether, given after morphin has been acting for half an hour, does not cause as much increase in blood sugar as if the morphin had not been used. However, the final degree of hyperglycemia is approximately the same, either with or without morphin.

Southwest Journal of Medicine and Surgery, El Reno, Okla.

May, 1918, **26**, No. 5

93 Cerebellar Localization. G. W. Robinson, Kansas City, Mo. —p. 97.
94 Treatment of Cerebrospinal Syphilis. R. Bolend, Oklahoma City. —p. 103.
95 Treatment of Spinal Tuberculosis. E. D. Ebright, Wichita, Kans. —p. 105.
96 Pneumonia. F. H. Clark, El Reno.—p. 107.

Washington Medical Annals, Washington, D. C.

May, 1918, **17**, No. 3

97 Treatment of Eye with Ductless Gland Products. S. B. Muncaster, Washington, D. C.—p. 187.
98 *Case of Cyst of Femur. J. A. Gannon, Washington, D. C.—p. 193.
99 Case of Aneurysm of Ascending Aorta, Involving Innominate and Proximal Portions of Right Subclavian and Common Carotid. C. B. Conklin, Washington, D. C.—p. 196.
100 Early Diagnosis and Treatment of Syphilis of Central Nervous System. J. E. Lind.—p. 198.
101 Charles Lamb and His Melancholia. D. S. Lamb, Washington, D. C.—p. 202.
102 Food Conservation. L. E. Kress, Washington, D. C.—p. 212.

98. **Cyst of Femur.**—Gannon's patient, a man, aged 65, was admitted to the hospital with extensive gangrene of right foot; arteriosclerosis and endarteritis as predisposing causes, and exposure to cold as the exciting cause. Examination showed besides the gangrene, an enlargement of the femur where, as he stated, there had been a fracture seven years ago. Gannon amputated the gangrenous limb by sawing through the enlargement of the thigh, and divided exactly in half, what proved to be the cyst. It contained about a half ounce of straw-colored fluid and a thick connective tissue membrane which was readily peeled from the surrounding bone. The membrane was removed from the proximal portion of the bone and the stump was sutured in the usual manner.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

May 11, 1918, **1**, No. 2993

1 *Prophylactic Use of Quinin in Malaria. C. H. Treadgold.—p. 525.
2 Interlobar Empyema and Other Surgical Complications of Thorax. W. Broadbent.—p. 529.
3 Choledocho-Enterostomy for Constriction of Common Bile Duct Following Perforated Duodenal Ulcer. W. A. Sneath.—p. 531.
4. Case of Hematidrosis. C. T. Scott.—p. 532.
5 Intermittent Hematemesis Following on an Injury to Chest. A. H. D. Smith.—p. 533.
6 Phagocytic Response to Introduction of Bacteria into Clean Wounds. W. J. Wilson.—p. 533.
7 Perforating Wound of Heart; Death on Fifth Day. C. F. Wightman.—p. 534.

1. **Prophylactic Use of Quinin in Malaria.**—Between the beginning of February and the end of April, 1917, Treadgold examined the various units of a certain division in Macedonia with a view to determining the proportion of men on duty who were infected with malaria. Smears from 540 men were stained and searched for parasites. Plasmodia were found in over 30 per cent. of the men who had been in Macedonia during the previous summer, while the altered differential leukocyte count suggested that over 60 per cent. of such men were in reality infected. Parasites were found in nearly 8 per cent. of men with no history of fever; if the increased hyaline count is regarded as evidence of infection, their number increases to over 37 per cent. Gametes were found in over 90 per cent. of the positive slides, and schizonts were also present in a large proportion. *P. vivax* was the common parasite found: *P. falciparum* was noticed on seven occasions, *P. vivax* being also present in four out of the seven; *P. malariae* was only diagnosed once. As to the prophylactic use of quinin in malaria, Treadgold says, that speaking generally, it may be stated that quinin prophylaxis is [illegible]ally a bad investment for immigrants in the absence of protection against mosquito bites; taking one thing with another, the practice would in their case seem to be little more [illegible] a pious fraud, which has been perpetuated from one generation to the next simply because public opinion throughout the world has never been sufficiently enlightened to encourage the working out of the problem on scientific lines. Clinical and theoretical considerations compel us to admit that the general course of the disease may be noticeably affected by the previous taking of quinin, and that the sum of such influences is frequently unfavorable. So far as the allied armies in Macedonia are concerned, there is every reason to suppose that quinin taken daily over periods of many months has increased the severity and chronicity of the disease in a certain proportion of cases. Taking one thing with another, the available evidence indicates that in Macedonia, at any rate, the disadvantages of quinin prophylaxis outweigh the advantages.

Dublin Journal of Medical Science

May, 1918, **145**, No. 557.

8 Treatment of Syphilis. T. P. C. Kirkpatrick.—p. 273.
9 Id. H. C. Donald.—p. 280.
10 Id. G. E. P. Meldon.—p. 286.
11 *Malaria; Its Treatment and Complications. W. F. Wicht.—p. 288.
12 New Femoral Index. J. R. D. Holtby.—p. 294.

11. **Treatment of Malaria.**—Wicht's line of treatment of malaria is as follows: As soon as there is evidence of an attack of fever he starts the patient off on 10 grains acetyl salicylic acid along with a diaphoretic mixture. He places him between blankets, and at the same time starts the administration of quinin. For the first ten days quinin is administered at the rate of 40 grains per day. It is then reduced to 30 grains and liquor arsenicalis is given at the rate of 5 minims daily. This treatment is continued in the foregoing manner for another ten days, then the quinin is reduced to 20 grains, and the liquor arsenicalis to 7½ minims per diem. Then the quinin is further reduced to 10 grains after another ten days of this treatment, but the dosage of the liquor arsenicalis remains the same. Finally the quinin is discontinued altogether after the expiration of another ten days. Wicht's treatment for chronic malaria is as follows: Starting off with antipyretics and quinin, in a manner similar to the treatment of acute cases, he continues by putting the patient through a course of arsenical preparation for four consecutive days. If the patient still shows malarial parasites in his peripheral blood he puts him back and gives him a further course of arsenic for six consecutive days. He continues driving the quinin in doses similar to those quoted for the ordinary acute infection.

Edinburgh Medical Journal

May, 1918, **20**, No. 5

13 Present Day Outlook on Tuberculosis. R. W. Philip.—p. 299.
14 Training of Student of Medicine.—Pathology and Medical Student. H. R. Dean.—p. 307.
15 Teaching of Pathologic Anatomy, with Special Reference to Clinical Medicine. I. Mackenzie.—p. 318.
16 *Pathology in General Practice. J. S. Edwards.—p. 329.
17 Teaching of Pathology. L. Smith.—p. 334.

16. **Pathology in General Practice.**—Edwards urges that: 1. Every graduate should have a thorough training in pathology, both theoretical and practical. This should be sufficient to allow him, should he find the opportunity, to carry out for himself not only routine laboratory work but also research. 2. Every general practitioner should have the right to laboratory report on any pathologic material, and this at no expense to himself or his patient. This should certainly include the right to the services of a competent pathologist to perform a postmortem examination in any case of interest. 3. Every provincial hospital should be provided with a fully equipped laboratory and a whole time pathologist. The only method of bringing pathology into active touch with the general practitioner is through the medium of the local hospital. All such local laboratories must be in intimate touch with the pathology department of some university, so that the more difficult examinations may be submitted for expert opinion.

Journal of Tropical Medicine and Hygiene, London

May 1, 1918, **21**, No. 9

18 Case of Trypanosomiasis with Other Protozoal Infections Contracted in Cameroons; Relationship of Filaria Diurna with Calabar Swellings. P. W. B. Smith.—p. 93.

Practitioner, London

May, 1918, **100**, No. 5

19 Influence of Dose and Its Bearing on Question of Communicability of Tuberculosis. L. Cobbett.—p. 402.
20 Chemotherapeutic Treatment of Gonorrhea. J. E. R. McDonagh.—p. 416.
21 Some Suggestions for Extension of Vaccine Therapy. H. G. Leyton.—p. 429.
22 Treatment and Degree of Curability of Neurasthenia Pura. S. H. Bennett.—p. 431.
23 Ionic Medication in Middle Ear Catarrh. A. A. Pim.—p. 440.
24 Nonsurgical Treatment of Exophthalmic Goiter—Counterblast. T. B. Scott.—p. 442.
25 Petrol Dermatitis. G. B. Page.—p. 451.
26 Case of Acute Tuberculous Peritonitis in Course of Paratyphoid Simulating Perforation. K. Yacoub.—p. 452.

Archives des Maladies du Cœur, etc., Paris

April, 1918, **11**, No. 4

27 *Dextrocardia. A. Clerc and J. Bobric.—p. 145.

27. **Dextrocardia.**—Clerc and Bobrie report a case in a robust soldier without associated lesions discoverable with the roentgen rays. His general depression and palpitations with slight tachycardia had developed *only* recently after a shell concussion, and his symptoms from the shell shock did not seem to differ from those in men with normal hearts. In 42 of the 56 known cases of dextrocardia the subjects were males. The anomaly was discovered in infancy in 6; and in the others at various ages up to 67. More than half were under 20. In 23 of 55 cases the anomaly was congenital beyond question and there were other malformations. In the 32 cases of pure, isolated dextrocardia there were no appreciable lesions or disturbances in the circulatory apparatus.

Archives de Médecine des Enfants, Paris

May, 1918, **21**, No. 5

28 *Echinococcus Disease in Children. F. Dévé.—p. 225.
29 *Meningococcus Septicemia. A. Netter.—p. 246.
30 *Bilateral Crossed Herpes Zoster. J. Comby.—p. 253.
31 *Child Welfare Work in America. J. Comby.—p. 258.

28. **Echinococcus Disease in Children.**—Dévé insists that echinococcus disease in children is merely a simple cyst without complications. In examining a child, the possibility of echinococcus disease should be borne in mind and strict search made for it, as excision of the cyst eradicates the disease. This is Dévé's fifteenth published study on echinococcus disease. He has long emphasized the futility of the recommendations for prophylaxis by hygiene. Can we ever get children to refrain from playing with dogs, eating raw fruit or drinking water that is not boiled or filtered? It is impossible to protect human beings and animals against the invisible germs of the disease scattered by the dog infested with the echinococcus. But we can prevent the dog from acquiring these germs. This is the true solution of the problem of prophylaxis: protection of the dog. The dog becomes infested only by eating the viscera of animals slaughtered for meat, beef, pig and sheep, affected with what the butchers call "bubbles," *boules d'eau.* Especially in rural districts, the destruction by fire of all the viscera from an animal infested with the echinococcus, and the absolute exclusion of every dog from the places where animals are slaughtered, will eradicate the disease. Treatment of the single cyst in a child is a simple operation when preceded by injection of formaldehyd to kill the parasites and ward off postoperative recurrence. The prognosis is favorable unless the cyst is in the brain, lung or abdomen. In the lung the outcome is fatal more often than in adults, and multiple cysts in the abdomen usually require several interventions. In diagnosis, the persisting good general condition accompanying a tumor in the liver is characteristic. The specific antibodies in the blood may confirm the diagnosis, but in about 10 per cent. the findings are misleading. Eosinophilia is seldom characteristic in children, especially in those with helminths.

29. **Intermittent Fever with Meningococcus Septicemia.**—Netter reports a typical case in illustration of the fact that meningococcus infection may assume the type of a regular daily or tertian intermittent fever. It is often accompanied by eruptions, a nodular or polymorphous erythema or purpura, and one or two months or more may elapse before the cerebrospinal meningitis caps the clinical picture. In some cases the meningitis never develops at all. Bacteriologic examination of the blood clears up the diagnosis when the spinal fluid gives negative findings. The intermittent febrile attacks yield promptly to proper serotherapy, preferably polyvalent treatment. Intravenous injection may induce alarming reactions even at the first injection, so that the intraspinal route is preferable.

The case described in detail was in a boy of 15, and the febrile paroxysms occurred *irregularly,* morning or afternoon, every day or third day. In the intervals he did not seem sick. This was the rule also in the similar cases in infants and others on record. The chill, fever and enlargement of the spleen were sometimes accompanied by joint symptoms, but the eruptive manifestations pointed to meningococcus infection rather than to malaria in one of his five cases. In a case reported by Cantieri the diagnosis had been successively malaria, Addison's disease, tuberculosis, Malta fever, septicemia and febrile syphilis. No signs of meningitis were apparent until the eighty-first day. No meningococci were found in the spinal fluid until a day or two later. Serotherapy then promptly restored the patient to health, after months of futile other measures.

30. **Crossed Bilateral Herpes Zoster.**—Comby's two patients were a boy and girl over 7. The boy developed herpes zoster simultaneously in the left upper chest and back of the right thigh. The girl had symmetrical herpes on both buttocks. In forty-two cases of herpes zoster in children recorded in the last few years, there was no neuritic pain, no neuralgia followed, and recovery was soon complete. The cases in children confirm the assumption that the zona is the result of some local or general infection affecting some nerve or ganglion with transient or chronic congestion.

31. **Welfare Work for Children.**—Comby speaks appreciatively of what is being accomplished in the United States in the line of puericulture, and especially the work of the Children's Bureau of the American Red Cross. He says, "The Americans of the North, the United States of America, in taking their place beside us to fell the German monster, want to aid us not only in the present but even in the future. After having done the possible to ensure the victory of Right over Might, of Civilization over Barbarism, they have thought of tomorrow, and affirmed their intention of aiding in the rescue of future generations." He describes what has already been accomplished and is planned, and remarks in conclusion, "This splendid attitude of our friends from America merits more than gratitude on our part. It should rouse us to put forth all the energy of which our race has *shown itself* capable in the course of its history."

Bulletin de l'Académie de Médecine, Paris

April 23, 1918, **79**, No. 16

32 Pigments of the Blood Serum. G. Patein.—p. 318.
33 Histology of Rapidly Growing Fibroma. A. Siredey.—p. 320.

April 30, 1918, **79**, No. 17

34 *Skull Plastics. J. A. Sicard, G. Dambrin and H. Roger.—p. 331.

34. **Bone Plastic Operation on the Skull.**—Sicard and his co-workers have been using for two years a method of closing the breach in the skull with a plate of bone taken from the skull of a cadaver. They have had no mortality in their eighty-five cases while the outcome has been a reliable and durable success. Metal plates are liable to become a source of irritation, and cartilage and other bone grafts are liable to grow weak in time and even be absorbed, with return of pulsation in the area.

Bulletin de la Société Médicale des Hôpitaux, Paris

March 8, 1918, **42**, No. 9

35 *Cancer of Esophagus. A. Siredey and Alevisatos.—p. 233.
36 *Nonrenal Edema. M. Labbé and Marcorelles.—p. 236.
37 *Ligation for Causalgia. Lortat-Jacob and G. L. Hallez.—p. 239.
38 *Concussion of Spinal Cord. G. Guillain and J. A. Barré.—p. 244.
39 Histologic Bacillosis of the Kidney. E. Lenoble.—p. 247.
40 Resisting Power of the Blood Vessels in Malaria Under Quinin. J. Baur, Bocca and Tulasne.—p. 250.
41 The Transfuso-Aspirator. J. E. Larché.—p. 252.
42 Cancer of the Prepuce. M. Pinard and Milon.—p. 254.
43 *Acroparesthesia from Chilling. J. Cottet.—p. 257; p. 260.

35. **Cancer of Esophagus.**—The ignored cancer in the man of 47 had never caused appreciable symptoms until it perforated into the trachea.

36. **Edema Without Nephritis.**—Labbé and Marcorelles report two cases of retention of salt, with anasarca, although the kidneys seemed to be normal. The diffuse and extreme edema in each case had developed during an attack of dysentery with anemia, and the edema subsided completely on a salt-free diet plus theobromin. The kidneys, heart and liver seemed to be entirely or approximately normal. The great loss of fluids from the dysentery seems to favor retention of chlorids and edema. The latter resembles in every respect the familiar edema with Bright's disease. The mechanism of its production is a mystery.

37. **Ligation of Nerve Cures Causalgia.**—Jacob and Hallez found all measures futile to relieve the intense pain in the domain of the right median nerve following a war wound entailing paralysis of the median and ulnar nerves. The causalgia persisted and there was not a trace of anything suggesting recovery of motor functioning by the end of the ninth month. Then Jan. 9, 1918, the median nerve was exposed for about 5 cm. well above the wound, and a ligature of No. 1 catgut was thrown around it. The nerve seemed large and much vascularized, with a slight edematous aspect. Within a few hours the pains were much reduced, and by the next day the causalgia had entirely subsided and there has been no recurrence during the months since although the motor paralysis and the reflexes were not modified. The hyperesthesia in the domain of the median nerve has changed to almost complete anesthesia, and the vasomotor and secretory disturbances in the region have almost entirely disappeared. The moderately tight catgut ligature inhibits or suppresses the irritability of the sympathetic fibers surrounding the nerve and the congestion in the trunk nerve, while the ligation does not injure the nerve fibers proper which are undergoing centrifugal regeneration. As the catgut is absorbed in a few days, the whole intervention is simpler and less of an operation than the other measures that have been applied in treatment of causalgia, including peripheral sympathectomy, injection of alcohol, or division of the nerve to which some have had recourse as the last resort.

38. **Paraplegia from Concussion of Spinal Cord.**—Summarized in Paris Letter, June 1, p. 1620.

43. **Acroparesthesia from Chilling.**—The sensory, vasomotor and trophic disturbances in the extremities under the influence of cold are important on account of the predisposition they entail to Raynaud's disease, to freezing of the feet, and to the so-called physiopathic contractures and paralyses after war wounds. There is evidently some constitutional or acquired vasoconstriction in hands or feet or in both, accompanied by analgesia of the four members and also sometimes of the nose and the ears. This analgesia embraces the limb except for the palm of the hand and the front part of the dorsum of the feet. When acquired, this syndrome can always be traced to some prolonged exposure to cold. Men known to have this acroparesthesia should be guarded against exposure to freezing, etc.

Paris Médical

April 13, 1918, 8, No. 15

44 *Stiff Joints. M. Nageotte-Wilbouchewitch.—p. 289.
45 Acute Swelling of Half of Tongue. G. Schreiber.—p. 299.
46 Measurement of Pleural Effusion. A. Challamel.—p. 301.

44. **Stiff Joints from Shortness of Muscles.**—Thirteen years ago Nageotte-Wilbouchewitch called attention to the inability of certain children to flex their joints normally. She explained it as the result of abnormal shortness of the muscles involved, and time has unmistakably confirmed this assumption. A number of typical cases are illustrated here. There is nothing to suggest inflammation or contraction in the muscles; they are merely too short in proportion to the bone levers which they control. She has coined the term brachymyonia to express this condition. It may become apparent at the age of 6 or 7, but it is usually during the period of intense growth, from 11 to 15, that the play of the joints is most restricted. The children are awkward and the mothers complain that they seem to be petrifying. Boys are affected more often than girls, and there is usually a family history of nervousness, sluggish metabolism or chronic rheumatism. Some of the children had been prematurely born or were twins. A familial and hereditary occurrence is not rare but the children of the poor and the children of the well-to-do escape. She found it restricted to the middle class; perhaps it represents a kind of atavism, generations of sedentary occupations breeding this lack of proportion between the growth of the skeleton and the growth of the muscles.

The insufficiency of the movements and the chronic asphyxia when the "stiffness" affects the chest, keep the child in a vicious circle. Passive and active exercises and massage may improve the condition, but they have to be kept up during the entire period of growth and for some time afterward. Her experience indicates that when the bones have got their growth, the muscles keep on growing for a time, so that finally normal proportions are restored. This brachymyonia involving the chest, preventing the normal play of the lungs, seems to be the hardest to correct, while it is exceptionally hard to outgrow, and is fraught with exceptional peril for the child's health in general. All kinds of measures to restore the normal excusions of the thorax are indicated, with training in diaphragm breathing. Corsets and tight belts are exceptionally harmful for girls in this category. Improvement in mind and body parallels the improvement in the movements as the children lose their awkward stiffness and grow supple again.

Presse Médicale, Paris

April 18, 1918, **26**, No. 22

47 *Gas Gangrene. E. Sacquépée.—p. 197.
48 Fitness for Service after Wounds of Peripheral Nerves. P. Descouts.—p. 198.
49 Nervous and Mental Disease and War Pensions. R. Benon.—p. 199.

April 22, 1918, **26**, No. 23

50 *Acute Meningitis in Inherited Syphilis. V. Hutinel.—p. 205.
51 Fluctuations in Spleen Early in Malaria. R. Porak.—p. 208.
52 Comparison of Bacteriologic and Chemical Analyses of Water. M. Brulé and R. Hazard.—p. 211.

47. **Gas Gangrene.**—Sacquépée reports that two anaerobes, the septic vibrio and the *Bacillus bellonensis* were found so constantly in 121 complete analyses in 100 cases of gas gangrene, that he is convinced that these are the specific agents of primary gas gangrene. The former seems to be responsible for the gas gangrene, the bellonensis for the gas gangrene and the edematous forms. They reproduce constantly the disease in animals, and exert the same toxic action.

50. **Acute Meningitis in Inherited Syphilis.**—Hutinel describes some cases in children between 3 and 15 in which the meningitis developed on a basis of inherited syphilis. It is like the meningitis in adults from acquired syphilis. In the first few weeks of life the specific meningitis is part of the grave general septicemic disease, but after the age of 2, there is not so much acute meningitis as the rearousing of old reactions on the part of the meninges to some casual infection acting on the already damaged nerve cells. The reaction may simulate tuberculous meningitis or it may be insidious and latent. Inherited syphilis should be suspected when the meningitis does not present the classical picture of ordinary meningitis and suspicious stigmata suggest possible syphilis, but the convincing proof is the recovery under specific treatment. Even when everything seems to suggest true tuberculous meningitis, he waits before informing the family until after a course of specific treatment. This does no harm in the tuberculous form while there is always a possibility that syphilis may be responsible for the meningitis, and that it may subside under treatment. The signs and symptoms of the *poussées méningitiques* in inherited syphilis are those of any acute meningitis; convulsions are frequent. The spinal fluid may show the findings common in tuberculous meningitis, or the lymphocytes may be replaced by medium or large mononuclears or polynuclears, and the cell count may vary rapidly. Spirochetes are not generally found in the fluid, and the Wassermann reaction is often negative. In about half his cases, a positive response to the Wassermann test in blood and spinal fluid was not obtained until after recovery.

The specific treatment evidently reactivated the substances yielding the Wassermann reaction.

Chirurgia degli Organi di Movimento, Bologna

February, 1918, **2**, No. 1

53 *Kinematic Plastics. G. Vanghetti.—p. 1.
54 *Operative *Treatment of Varicose Veins.* A. *Guaccero.*—p. 21.
55 *War Fractures of Long Bones. M. Francini.—p. 41.
56 Fractured *Humerus.* F. Rossi.—p. 83.
57 *Transitional Artificial Legs. V. Putti.—p. 91.

53. **Vitalization of Artificial Limbs.**—Vanghetti describes the history of his twenty years of efforts to have surgeons adopt the principle of direct muscular control of the movements of the artificial limb by the muscles in the stump. He is not a specialist surgeon himself, but he advocated the principle and had published seven articles on the subject between 1898 and 1908 and several since. He has devised fifty-one different ways in which the principle can be applied in various ways, including the utilizing of antagonist muscle action. He gives no mechanical details, leaving the working out of the principle to surgical specialists, as Sauerbruch in Germany (1916-1917) has already done although *forgetting* to mention the Italian source of the principle.

54. **Varices.**—Guaccero reviews the history of operative treatment of varicose veins in the leg, describing eight different technical procedures for the purpose, and sixteen operative cases from his own experience. He advocates operative treatment in all cases with extensive and progressive invasion, especially in the young. The most imperative indications are in the cases with a reflux from the heart on account of the insufficiency of the valves. The insufficiency of the valves of the internal saphenous vein, with ectasia, tortuous course and ampular dilatations, is shown up prominently by having the reclining patient stand up. The saphenous vein is then seen to fill up from above as well as from below, a centrifugal wave meeting the centripetal wave. The primary iliac and the external iliac have no valves, and when the saphenous vein is so enlarged that its valves become insufficient, then the result is a single long open tube into which the blood backs from above. The advancing wave from above can be checked by pressing the finger on the vein, but when the pressure is released, the vein at once grows turgid. In such cases the vein is liable to rupture, with profuse hemorrhage, and operative measures are urgently indicated. Removal of the entire vein is the most logical and certain treatment, removing the whole trouble at once. If this is not practicable, he advises excision of the most pronounced varices, and suture of the skin over other parts of the vein after cutting out a spindle-shape flap. Bringing the lips of the wound together exerts a pressure like that from an elastic stocking.

When the sign of the cardiac reflux is not apparent, then the cause of the varices is what he calls deep regurgitation. Muscles contracting over the deep system of veins compress the veins and force the blood in them out into the superficial veins. When this is the case, the varices develop at points where the intercommunicating veins are most numerous, namely, in the middle of the leg, in the middle third of the thigh, and in the triangle of Scarpa. Extensive removal of the vein is the best procedure here also, preferably of the entire vein. In the sixteen cases reported, total saphenectomy was done on the left leg in eight, the right in two and on both legs in three. In two, both the internal and external saphenous vein were removed. The results were invariably most gratifying, at the time and during the years since. In what is called varicose cyanosis, involving the capillaries, injections of some coagulating substance may be useful to supplement the removal of the vein.

55. **War Fractures of Long Bones.**—Francini discusses his two years of experience in a field hospital. In one case tetanus followed gas gangrene. On account of the gas gangrene, the thigh had been amputated. Antitetanus serum was given at the time and again a week later and the stump seemed to be healing perfectly when rapidly fatal tetanus appeared the fourteenth day, as also in another case, the twenty-first day. Amputation is imperative when gangrene from anemic necrosis becomes superposed on the bacterial, and at the earliest possible moment. Francini's extensive experience teaches that the whole of the muscle is infected throughout when one segment is unmistakably affected with gas gangrene. The stump, therefore, should be short unless the amputation can be done in the thigh, for instance, when the infection is in the leg. As the seat of the infectious process seems to be exclusively in the muscles, there is no advantage in a disarticulation rather than amputation. A high amputation with a lateral incision, as in the second step of a disarticulation, favors elimination of secretions and of necrotic tissue. He emphasizes that the gas impregnation of the tissues may extend higher than the actual infectious process. Hence we are not completely disarmed even if the characteristic sound (*scricchiolio*) *reaches above the root of the limb.* Of course the outlook is less favorable, but he has had successes even under these conditions, and so have others. Reamputation later is liable to rouse the sleeping or healing process anew, with disastrous consequences.

The circular method of amputation is his choice, and he swabs the stump freely with iodin. The soft parts can be stretched to cover the stump by means of two loops of adhesive plaster on each side fastened to a circular strip around the skin of the stump. A similar cage made of wire projects below the end of the stump. A piece of rubber tubing fastens the apex of the wire cage to the similar cage formed by the adhesive plaster strips. Gentle traction is thus exerted on the soft parts of the stump, and in a few days they are long enough to cover the stump completely. In his first series of twenty-nine amputations for gas gangrene *only 24 per cent.* of the men died, but in twenty-five recent cases so many hours had elapsed before it was possible to pick up the men, that all died but seven.

57. **The First and the Transitional Prostheses.**—Putti discusses the principles involved in preparing the stump for the definite prosthesis by the wearing of the pilon, and the importance of the proper fitting of the latter and of the transitional prosthesis.

Gazzetta degli Ospedali e delle Cliniche, Milan

April 4, 1918, **39**, No. 27

58 *Chronic Typhoid. F. Bergolli.—p. 267.

April 7, 1918, **39**, No. 28

59 *The Staphylococcus Albus. G. A. Pari.—p. 273.

58. **Chronic Typhoid.**—Bergolli reports three cases which warn that possibly typhoid with a tendency to chronicity may be mistaken for ordinary intestinal catarrh, febrile dyspepsia or masked tuberculosis, when examination of the blood or the agglutination test would reveal the typhoid origin of the disturbances. These disturbances may be of the nature of a series of complications, or anemia with much enlarged spleen, or a mild septicemia with gastro-intestinal manifestations. This latter group includes cases in which there seem to be series of reinfections, and also cases with series of relapses. In the first of his three cases the man had intervals of comparative health alternating with febrile bowel disturbances requiring hospital care. The paratyphoid B was cultivated from the blood each time, as also at the latest febrile period, ten months after the first symptoms. The temperature at this time ran up to 104 F. for one day and kept subfebrile for some time, with intense anemia but no delirium. The liver was hard and very large, and there was a tendency to urticaria. After subsidence of the fever this time the blood findings and tests were negative. There were no rose spots at any time. It is possible that paratyphoid is responsible for many cases of vague morbid conditions that drag along over months and are labeled catarrhal enteritis, febrile dyspepsia, etc. In another case the diarrhea, abdominal pains, headache and general weakness had lasted with ups and downs for a year. The paratyphoid B bacillus was found then in the blood, and the liver was very large and hard. A third patient had typhoid early in 1917 for sixty days. A month later he returned with fever and typhoid symptoms but the blood tests were negative. During the entire year he had to go to the hospital again and again on account of headache, diarrhea and abdominal pains, and finally the fever became continuous and the liver very much enlarged, but

there was no diarrhea. The fever gradually declined during the following three weeks, but then ran up very high, with a chill. After this it subsided to normal range by the thirteenth week. There had been no typhoid status during these weeks, and the blood findings were negative until the sixth week when typhoid bacilli, agglutinating at 1:400, were found. The importance of repeated bacteriologic examination of the blood in such cases is evident.

59. **The Staphylococcus Albus.**—Pari reports a number of typical cases which confirm the pathogenic properties of the *Staphylococcus albus.* He never was able to cultivate it from the blood of apparently healthy persons, but found it frequently in the blood of those presenting symptoms suggesting some coccus septicemia. In one boy of 13, polyarthritis dominated the clinical picture, in another a suppurative process in one hip joint yielded both the albus and aureus. In one man of 56 there was pericarditis and pleurisy in addition to polyarthritis and symptoms of sepsis, with final convalescence after nearly four months of illness with the albus cultivated from the blood. It was obtained also by puncture of the spleen in a boy of 16 with a mild form of albus sepsis. The fifth case is that of a woman of 31 with acute otitis media and mastoiditis, chills, fever, pleurisy, phlegmons and cystitis, developing shortly before delivery of a child that died an hour after birth. No microbes could be cultivated from the blood, but pure cultures of the albus were derived from the subcutaneous tissue of the arm at the point of the greatest infiltration.

Pediatria, Naples

April, 1918, **26**, No. 4

60 *Meningitis at Palermo. G. Di Cristina and M. Sindoni.—p. 193.
61 *Factors Impeding Breast Nursing. A. Borrino.—p. 220.
62 Pituitary Feminism and Adenoids. P. Calicceti.—p. 233.

May, 1918, **26**, No. 5

63 *Congenital Syphilis of the Kidneys. A. F. Canelli.—p. 257.
64 Biologic Tests for Casein in Stools. L. Maccone.—p. 270.
65 *Vaccine Therapy of Malta Fever. P. Chiriaco.—p. 282.

60. **Epidemic Meningitis.**—Di Cristina and Sindoni relate that meningitis has been prevailing in eipdemic form at Palermo during the last five years. The mortality showed a downward trend until last year when there seemed to be an unusual predominance of extremely toxic cases and of relapses, flaring up of latent infection into the acute form, and protracted forms, the fever dragging along as if maintained by some suppurative process. Nothwithstanding free application of serotherapy, the mortality was over 54 per cent. in nurslings. The meningococci responsible for the tardy relapses and flare-ups seemed to be the same as at first, having regained their virulence after it had been for a time attenuated under the influence of the serotherapy. They had lost their agglutinating property, however, and had become resistant to the action of the antiserum. In fifty cases of the epidemic meningitis, sixteen developed these severe recurrences or relapses when the disease seemed to have been entirely conquered and the patients had apparently recovered or were convalescing. At first all those affected died. Serotherapy at this stage seemed to be futile and induced symptoms suggesting anaphylaxis even when this could not have been the case. They then began vaccine therapy, and when the intravenous route was adopted, the mortality dropped from 98 to 16.5 per cent. The charts from several cases in children given this vaccine therapy are reproduced. The fever declined and disappeared and both the general and local symptoms subsided and the spinal fluid cleared up.

61. **Functioning of the Mammary Gland.**—In this second study of this subject, Borrino sought to determine the reasons why bottle feeding, instead of breast feeding, had been given a certain proportion of the 1,110 children at the children's clinic at Turin and at the dispensary and consultations. As she found from her previous research, the women actually incapable of nursing their children are few and far between. Another point emphasized by her experience is that medical advice and assistance during the first week are able to increase materially the number of women able to nurse their children amply. Only in eighteen of 200 cases had the breast nursing been suspended later than the first month. In all the others the artificial feeding had been instituted during the first or second week. Consequently medical supervision and advice during the first two weeks may be said to ensure breast milk to the child. Milk stations, etc., to supply milk for infants are not needed so much as consultations, where the mothers are advised how to care for their infants. Distribution of milk has the wrong effect; it trains to artificial feeding of infants. In conclusion she reiterates that the first two weeks are the vital ones in this respect, and that prizes, lunches and other inducements should be offered to coax the mothers to bring their infants for consultations during these first weeks above all.

63. **Congenital Syphilis of the Kidney.**—Canelli has found congenital syphilis of the kidneys relatively frequent at necropsies. The manifestations of it are sclerotic atrophy, gummas, and cysts from retention. Amyloidosis of the kidneys is not characteristic of congenital syphilis. The nephritis from inherited syphilis may be an acute interstitial and parenchymatous form or a chronic sclerous atrophic. Familial syphilitic albuminuria may be a manifestation of tardy inherited syphilis.

65. **Vaccine Therapy in Malta Fever.**—Chiriaco reports three typical cases in children out of his extensive experience to sustain his statements as to the remarkable curative value of vaccine—made by the Di Cristina-Caronia technic—in treatment of undulant or Malta fever. He declares that no time should be wasted on quinin, dieting and intestinal disinfectants, but the vaccine should be given at once, as the patient grows worse under the other measures until irreparable damage results. He gives the vaccine by intramuscular injection, and relates that the results were always certain and extremely effectual, often actually remarkable from the rapid and complete disappearance of the infection.

Rivista di Clinica Pediatrica, Florence

April, 1918, **16**, No. 4

66 *Familial Spasmophilia. M. Pincherle and A. Pollidori.—p. 169.

66. **Familial Spasmophilia.**—Pincherle and Pollidori have been making a special study of spasmophilia in different members of various families. They analyze what has been written on spasmophilia to date, especially on the familial factor, and review their experiences during the last ten years at the Bologna clinic for children's diseases. In ninety-one examples of typical spasmophilia, a familial factor was evident in twenty-five, that is, in nearly 25 per cent. It usually was manifested in the appearance of tetany in two or more members of the family. In some the spasmophilia was latent and required special tests to bring it into evidence. In some families alcoholism or grave constitutional disease or neuropathic stigmata were manifest in parents or brothers or sisters. Rachitis, status lymphaticus, adenoids or merely enlarged glands often accompanied the symptoms of spasmophilia. The boys outnumbered the girls in the children with spasmophilia. A familial occurrence is thus shown to be not the exception but the frequent rule. Instead of incriminating defective feeding and other extraneous factors, some constitutional abnormality is probably responsible. The causal factors are more than a mere casual accidental hemorrhage in the parathyroids which some have suggested as the cause. The whole thyroid and thymus system may be below par, or the endocrine system. This view is sustained by Fiore's case in which hypotrophy of the thymus occurred in a pronounced form in both parent and child.

Annaes Paulistas de Med. e Cirurgia, S. Paulo

July, 1917, **8**, No. 7

67 Trauma of Spinal Cord Simulating Radiculitis. A. de Lima and L. Torres.—p. 149.
68 *Treatment of Tuberculosis. C. Ferreira.—p. 157.
69 *Ambard's Constant in Diagnosis. M. de S. Aranha.—p. 162.

August, 1917, **8**, No. 8

70 *Treatment of Amebic Dysentery. T. Bayma.—p. 173.
71 *Brain Tumor. H. Xavier.—p. 184.

68. **Treatment of Tuberculosis.**—Ferreira reviews a year's experiences with tuberculin treatment at the special tuberculosis clinic. He restricts the use of tuberculin to the first

stage of tuberculosis of the lungs, and to cases not showing a rapidly progressive or highly toxic course. He found it of benefit to give a complementary course with bovine tuberculin and then return to human tuberculin, or vice versa. Always he made a point of keeping the doses down to those inducing merely a minimal reaction, convinced that the tuberculin has no specific action but merely stimulates the organism to a more effectual defense. Hence it is futile to give it when the organism is not capable of devoting its energies to defense or is not free to do so. A lively reaction to the skin tuberculin test is a favorable sign. Tuberculins of different makes seemed to have always about the same action. One of the eight patients treated with induced pneumothorax died from complications and one has grown worse. The others are all either clinically cured or materially improved. The air at S. Paulo is very humid for heliotherapy. The patients did not even tan much under the exposures, showing that the ultraviolet rays scarcely reached the skin, but still five patients seemed to be materially benefited by the sun baths. Roentgen treatment gave good results in treatment of tuberculous glands. In twelve patients the tuberculin and Wassermann tests were both positive and there was one case which proved to be exclusively syphilis of the lung.

69. **The Value of Ambard's Constant.**—Aranha summarizes recent works on uremia in heart disease, in jaundice and with gastro-intestinal disease. All demonstrate the high value of the ureo-secretory constant both in diagnosis and prognosis.

70. **Amebic Dysentery**—Bayma remarks that he was the first to try epinephrin in treatment of amebic dysentery, publishing in July, 1915, his report on the systematic use of epinephrin in amebic dysentery. In later communications he endorsed its efficacy also in amebic liver disease and in appendicitis. In 1912 he found amebas in 0.11 per cent. of 3,419 stools examined at S. Paulo; in 1914 the proportion had risen to 2.04 per cent. of 3,418 stools, and in 1916 to 10 per cent. of 5,429 stools. Reports during the war from various countries indicate a wider prevalence of amebic dysentery in temperate climates than was formerly suspected. Epinephrin has certain advantages over emetin for treatment of amebic dysentery, and the experiences to date seem to indicate that the ameba is eradicated by it and does not pass into the encysted form. The epinephrin further has an important action on the suprarenalitis which has lately been demonstrated to be part of the clinical picture of amebic dysentery. Emetin and also the biniodid of bismuth and emetin have a more or less depressing action in amebic dysentery, directly aggravating the depression, weak pulse and tendency to syncope which reveal insufficiency on the part of the suprarenals. Epinephrin, on the other hand, suppresses the distressing colic and tenesmus, toning up the general system by its angiotonic and antitoxic action. The epinephrin can be given by the mouth up to 3 or 5 mg. a day without appreciably raising the blood pressure. Patients treated by Bayma with epinephrin over two years ago have remained in the best of health with nothing to indicate persisting infection with the ameba, and with nothing to suggest injury of the arteries or other organs from by-effects of the epinephrin. Only when the epinephrin is given by intravenous or intratracheal injection is there danger of by-effects. Bayma discusses further the experiences to date with oil of chenopodium, etc., and gives the bibliography of all these newer methods of treating amebic dysentery.

71. **Brain Tumor.**—Xavier reports a case of tumor in a man of 60 which had destroyed nearly all the white matter of the right hemisphere from the frontal pole to the occipital pole. The extent of the tumor explained the wide range of the symptoms. The sense of smell was lost but not vision. The absence of epilepsy spoke for a subcortical site. The ataxia had not been accompanied by vomiting or other cerebellar symptoms.

Cronica Medico-Quirurgica, Havana

April, 1918, **44**, No. 4

72 Present Status of Leprosy. J. E. L. Silvero.—p. 194.
73 Should the Patient be Informed of Impending Incurable Blindness? J. Santos Fernandez.—p. 200.
74 Sick Mother Should Nurse Her Child. T. Hernandez.—p. 206.
75 *Trachoma in Cuba. J. M. Penichet.—p. 211.
76 Circumcision in Women: Five Cases. P. Pelaez.—p. 219.
77 Quackery in Cuba. F. M. de la Cruz.—p. 221.
78 *Brazilian Trypanosomiasis and the Thyroid. E. Novaes.—p. 224.

75. **Trachoma in Cuba.**—Penichet's work was awarded the prize offered by the *Cronica* at the recent Cuban Medical Congress. He has found classic epidemic trachoma only in foreigners in Cuba, the natives having few cases and the disease so attenuated as to mask its nature. Trachoma formed only from 3.5 to 5.77 per cent. of the cases of eye disease treated in the clinics, and only 3.25 per cent. of Santos Fernandez' 36,242 eye patients between 1875 and 1903. In recent years the proportion of suspicious cases has risen to 10 per cent. but not all the cases with the clinical aspect of trachoma are the actual disease. The secretion may contain only the bacteria commonly found in inflamed eyes, and treatment may be promptly effectual. In one remote district Penichet found every one of the 1,000 children suffering from this false trachoma. He saw how the eye disease spread through the whole family when one member contracted a simple acute conjunctivitis, the total lack of hygiene favoring its transmission. By the time the first member of the affected family enters on convalescence he becomes infected anew from some of the other members of the family, and a vicious circle is started. One small vicious circle starts others and larger ones, so that it is a difficult matter to stamp out such an epidemic. These repeated inflammations finally entail more or less hardening, the conjunctiva reacting with hypertrophy, and it is very easy to mistake cases at this stage for trachoma. They respond as if by magic to operative treatment. In 10,000 cases of eye disease he has examined he found true trachoma only in less than 4 per cent., and he now is wary in diagnosing trachoma until he has had a chance to study the effects of treatment. Guiral and Soler have recently announced that the features of trachoma suggest a fungus origin, but the commission appointed to study this phase of the subject were unable to confirm their statements. No effects were obtained by Penichet with autogenous vaccines.

78. **Brazilian Trypanosomiasis.**—This seems to be a translation of an article which was summarized in The Journal, Nov. 11, 1916, p. 1479.

Revista de Medicina y Cirugia, Havana

April 25, 1918, **23**, No. 8

79 *Iodin in Surgery of the Eyes. R. Guiral.—p. 224.

79. **Iodin in Ophthalmology.**—Guiral comments on the absence of caustic action when tincture of iodin is applied to the eye. He has used it in 107 cataract operations without iridectomy and in seventy-four cases with iridectomy, and all were cured in three days. In four cases of hernia of the vitreous body all were cured in four days. He regards it as harmless for the eyeball; no signs of irritation are apparent when the eye is dressed the next day. Even the vitreous body does not seem to be injured by it, he says, while it wards off postoperative pain and promotes rapid healing.

Revista Medico-Cirurgica do Brazil

January, 1918, **26**, No. 1

80 *Radiology in France during the War. M. D. de Abreu.—p. 4.
81 *Elimination of Chlorids in Pneumonia. A. de F. Guião.—p. 9.
82 Heteradelphus Parasitic Monster. A. Silva, Jr.—p. 30.

80. **Roentgen Work in France.**—De Abreu is chief of the radiologic cabinet connected with the Franco-Brazilian ambulance stationed at Paris, and he descants on the revolution that has taken place in France since the war began in the general estimation of the roentgen rays. Before that, there were a few very eminent radiologists in France but the rank and file of the profession paid little attention to the roentgen rays, "and nothing," he remarks, "opposes such unconquerable resistance to the onward march of ideas as silence." The professional roentgenologists were misled by the Austrians into viewing radiology almost exclusively from the therapeutic standpoint.

The rays were experimented with in every disease and although the results were found excellent in some, this was restricted to certain parasitic skin diseases, tumors and certain forms of bone or skin tuberculosis, and leukemia. The rays were also used in diagnosis by a few French writers, especially the internists. But the majority of the physicians knew little and cared less about this method of examination, and even some of the first class medical services in the hospitals only rarely called for a roentgen examination of a patient, and then only for cancer of the stomach or kidney stones, and the chief of the service never followed the patient to the roentgen room. De Abreu had charge of the roentgen service in the largest hospital, and in his long months there only Chauffard, and he only once, followed the patient to the roentgen room. All apparently were content with the auscultation and percussion, the pathologic anatomy and bacteriology and chemistry findings.

But with the war and the necessity for locating projectiles in the tissues, radiology sprang at once into the first rank, and its importance for diagnosis in wide fields was soon recognized—a revelation for all. At the same time, roentgenology did not detract one iota from the value of clinical examination but enhanced its value. The war precipitated the use of the roentgen rays and de Abreu pleads for a similar diffusion in Brazil of knowledge concerning them and their wide and systematic utilization, without waiting for a war to force it on the country. He urges the creation of a chair for radiology in the University of Rio de Janeiro. Both in civilian and in military circles the young physicians of Brazil should get this training in roentgen work, and perhaps take a leading part in radiology, as some have done already in bacteriology.

81. **Elimination of Chlorids in Pneumonia.**—Guião devotes twenty pages to discussion of the literature on the retention of chlorids in pneumonia and the findings in ten cases personally investigated. He determined repeatedly the proportion of chlorids in the urine and in the sputum, with control research on some tuberculous and healthy controls. The chlorid content was higher in the sputum than in the urine during the febrile period, but after defervescence the reverse was observed. The difference between the total elimination of chlorids before and after defervescence is minimal. In the tuberculous, the chlorid content of sputum and urine kept approximately the same.

Siglo Medico, Madrid

March 9, 1918, **65**, No. 3352

83 *Endemic Goiter in Spain. J. Goyanes.—p. 182. Conclusion.
84 Jacksonian Epilepsy or Hystero-Epilepsy? F. G. Aguilar.—p. 184. Conclusion.

March 16, 1918, **65**, No. 3353

85 *Echinococcus Cysts Back of Bladder. I. S. Covisa.—p. 202.
86 Blunders in Roentgen Diagnosis of Echinococcus Cyst in Lung. A. Piga and A. Ferran.—p. 205.
87 Is Isolation Useful in Measles? B. H. Briz.—p. 207.
88 Social Insurance. Ubeda y Correal.—p. 208. Conclusion.

83. **Endemic Goiter in Spain.**—The previous instalments of Goyanes' article were reviewed on page 1570. He here gives illustrations of cretins and adults with goiter from the various villages in the Avila province. In one with 300 inhabitants he found four cretins. In one district with 1,780 inhabitants, in 1914 every one of the young men registered for military service was rejected on account of goiter.

85. **Retrovesical Echinococcus Cysts.**—Covisa's patient was a young man of 20, with no appreciable pathologic antecedents, who complained that micturition had been difficult for about four months. A smooth tumor could be felt reaching from the prostate region to the hypogastrium, with no signs of general or local inflammation. The complement deviation test for echinococcus disease was strongly positive, and the huge cyst was opened through a hypogastric incision and sutured to the lips of the wound. It apparently filled completely the space between the bladder and rectum and extended to the abdominal wall in the hypogastrium. In a second case with this same localization of a large echinococcus cyst between the bladder and the rectum, the latter had been compressed most and the disturbances had been mainly in defecation instead of in urination. This cyst was detached from below.

Hospitalstidende, Copenhagen

March 27, 1918, **61**, No. 13

89 *Invagination from Tumor. J. Henrichsen.—p. 385.
90 *The Anamnesis with Eye Disease. H. Rønne.—p. 403.

April 3, 1918, **61**, No. 14

91 *Hypertonic Treatment of Ulcers. C. Permin.—p. 417.
92 Experiences with Carrel-Dakin Treatment. P. V. Tuxen.—p. 422.

April 10, 1918, **61**, No. 15

93 *Meningococcus Infection. S. T. Sørensen.—p. 449.
94 Present Status of Hemeralopia. K. K. K. Lundsgaard.—470. Commenced in No. 14, p. 429.

89. **Invagination from Tumor.**—In the case described, the woman of 51 recovered after resection of ileum and colon, the seat of invagination induced by a polypous fibroma in the cecum. She had had several attacks suggesting ileus, probably disturbances from invagination which had spontaneously corrected itself in time while the tumor was small. At first the attacks were merely periodical, vague digestive disturbances and abdominal pains. As they returned at long intervals they simulated various abdominal morbid conditions to actual ileus. Even if the invagination corrects itself, it is liable to recur, so that an operation when invagination is certain or even suspected is advocated.

90. **The Anamnesis with Eye Disease.**—Rønne remarks that when the practitioner is consulted on account of asthenopia, he can assume that the trouble is more likely to be from conjunctivitis if it has developed recently and acutely. Intolerance for tobacco smoke is perhaps the most constant symptom of conjunctivitis, as also of a stye. Recurring styes can be easily and certainly cured, he adds, with a persevering salve treatment, for example, with Ung. chloret. amido. hydrarg. With epiphora, the extent of the flow of tears can be estimated by asking whether a handkerchief has to be carried in the hand in the street to wipe the eye, and whether the flow continues in the house. Especially if the flow is only on one side, treatment is called for as dacryocystitis practically always develops in consequence of a chronic stricture or catarrhal process in the lacrimal duct.

With the sensation of a foreign body in the eye, the knowledge that the sensation comes and goes, testifies against there being an actual foreign body; with this the sensation would be continuous. Intermittent sensations of this kind are probably from some accumulation of conjunctivitic secretions. These foreign body pains are always located in or just beneath the conjunctiva, contrary to the pains from iritis. These are of a neuralgic type, mostly in the temple and forehead, and growing worse at night. Atropin is the best remedy here; it acts usually nearly instantaneously. Inflammatory glaucoma induces exactly the same type of pains, but atropin is absolutely contraindicated here. Glaucoma can be excluded not only by its objective symptoms but also by the rainbow halo around lights. The anamnesis is also highly instructive with bullous keratitis, developing after a scratch of the cornea and returning again and again after free intervals of days, months or years.

He warns against mistaking simple glaucoma for senile cataract as treatment of the former in time may arrest it. The beginning cataract is usually accompanied by monocular diplopia; women notice that in threading a needle they see two or several needles. An incipient cataract may induce some myopia; when the elderly suddenly lay aside their presbyopia glasses and read without them, this warns of beginning cataract. Simple glaucoma on the other hand, has scarcely any anamnestic symptoms, not even the rainbow halo, if treatment is not delayed until too late. The physician must be on the alert to detect hemianopsia and diplopia, even if the patient has not recognized himself the true nature of his visual disturbance.

91. **Hypertonic Saline in Treatment of Wounds and Ulcers.**—Permin found that the infected wound healed up remarkably quickly under hypertonic salt solution in the 120 cases in which he applied this treatment. The indications for it are when the wound cavity has infected, infiltrated walls. It is particularly useful under war conditions, in the office surgical work of the general practitioner, at first aid stations, and in the surgical policlinic. The method is easily applied, it is inexpensive and it is effectual, he declares.

93. **Meningococcus Infection.**—Sørensen discusses the Holmen epidemic in 1917 which has already been described in these columns, p. 498. The previous report on the subject was written too exclusively from the bacteriologic standpoint, he says, and he here emphasizes the three phases of the epidemic, first the widespread catarrhal disturbances, then a mild exanthematous sickness, and then a crop of meningitis cases with petechiae and 100 per cent. mortality. The cocci found corresponded in every particular to the typical meningococcus, except that it proliferated in bouillon-agar without waiting for admixture of ascitic fluid. Sørensen says that this extra vigorous proliferating power may explain the invasion of tissues other than those to which the meningococcus generally restricts its ravages, and hence its wide proliferation permitted an exceptional development of toxins, and acute fulminating toxic action. The clinical picture resembled that of varioloid purpura, and necropsy revealed infected spleen, pneumonia, purulent pericarditis and parenchymatous degeneration of organs. He is inclined to incriminate some other factor, as the men with this fulminating type all came from a certain compartment of the school ship. The assumption that the meningococcus in question was of a special and distinct type, or that there were two diseases present, one causing the exanthem and the other the meningitis, would explain the clinical course, and would also give greater hope of effectual treatment. The epidemic was arrested as soon as the quarters affected were temporarily abandoned.

Svenska Läkaresällskapets Handlingar, Stockholm

March 30, 1918, **44**, No. 1

95 *Abdominal Injury in the Newly Born. G. Hedren.—p. 1.
96 *Intracranial Hemorrhage in the Newborn. G. Hedren.—p. 53.
97 Center of Gravity of Erect Body. C. Hesser.—p. 133.

95. **Fatal Injury of Viscera in the Newly Born.**—Hedren discusses intrapartum injuries of the liver, pancreas, suprarenals and kidneys as he has encountered them or found reports in the literature. One most important practical conclusion from his study of the subject is that fatal injury of viscera may occur with spontaneous delivery. In his examination of 1,000 cadavers of new-born infants he found two with actual rupture of the parenchyma of the liver, one with spontaneous and one with forcible delivery. The mother in the latter case was a primipara of 42; the other mother was a tertipara of 22. In both cases there was breech presentation; the delivery occurred spontaneously in the younger woman but the child succumbed during delivery; the other child lived a day. In these as also in the comparatively numerous cases he has compiled from the literature, the liver was gorged with blood but otherwise normal. The child of another woman, a secundipara of 31, died six hours after spontaneous delivery in vertex presentation and necropsy revealed rupture of the spleen. In all the cases known of intrapartum rupture of the spleen, it was found already diseased. There is only one case each on record to his knowledge of fatal rupture of the pancreas or kidney, but minute subcapsular hemorrhages in the pancreas were found comparatively often in the 1,000 cadavers of the newly born. He gives summaries further of seventeen cases of fatal intrapartum injury of intestines, and one case of hematoma in the cecum and two of rupture of vessels in the omentum. In some of the cases conditions seemed to indicate that the rupture had occurred before delivery; in some during spontaneous delivery.

Among the 1,080 newly born infant cadavers, Hedren found a pronounced hematoma in one suprarenal gland in eight cases. In four the forceps completed the delivery, and in one case version and extraction were applied. In the four other cases delivery had been spontaneous, and a number of similar cases are on record. Every factor that increases the pressure in the veins, asphyxia, disturbance in breathing, promotes further the tendency to central hemorrhage in the suprarenals. There are some cases on record in which the swinging method of artificial respiration seems to have been responsible for the hemorrhages, although in some cases they had evidently preceded the swinging. This sequence of events is open to discussion in a case described by Hervey in which an infant died the tenth day after birth. Hemorrhages were found in the suprarenals and also in the skull, and the mother related that the child had fallen off the bed the day after its birth. Hervey ascribed all the hemorrhages to this, but the suprarenal damage may have occurred from birth trauma. Three pages of bibliography are appended.

96. **Intracranial Hemorrhage in the Newly Born.**—Hedren found intracranial hemorrhage in about 9.28 per cent. of 700 infant cadavers. The hemorrhage was restricted to the meninges in nearly 84 per cent., and cerebral hemorrhage accompanied the meningeal hemorrhage in others, bringing the total of meningeal hemorrhages to 90.7 per cent. The clinical and anatomic details of each case are given, with the bibliography on intracranial hemorrhage in the newly born. Delivery had been spontaneous in 50 of the 65 cases, and conditions in both mother and child seemed to be normal in most of the cases. In the 42 purely meningeal cases, the hemorrhage had been supratentorial in 32; infratentorial in 10, and both in 6. He ascribes great causal importance to intra-uterine disturbances in respiration and circulation, as well as to compression of the bones of the head in the birth passage. Only 3 of the children presented unmistakable evidence of inherited syphilis. In a few of the cases the mother had eclampsia. In 10 medicolegal cases, the intracranial hemorrhage was nearly always accompanied by signs of asphyxia, venous hyperemia, ecchymoses, etc. He emphasizes that injury from the birth trauma may resemble in every respect injury from certain external causes after birth. It is also important to bear in mind that these intracranial hemorrhages may occur with rapid and easy spontaneous delivery. He emphasizes also that the intracranial hemorrhage may occur during birth without fracture of bone, and hence that when a fracture or a fissure is found in the skull bones, this may have occurred after delivery. In conclusion he adds that on account of the medicolegal importance of intracranial hemorrhage, some standard procedure should be formulated and enforced for the taking out and the examination of the brain of the newly born in medicolegal cases. Hedren's two articles on hemorrhage in the newly born fil 132 pages, and each is accompanied by a full summary, in German.

Ugeskrift for Læger, Copenhagen

March 28, 1918, **80**, No. 13

98 *Habitual Constipation. VI. T. E. H. Thaysen.—p. 509. Com-
menced in No. 12, p. 467.
99 Puzzlinig Cases of Extra-Uterine Pregnancy. Henrichsen.—p. 52

98. **Dyspepsia with Habitual Constipation.**—*This is Thaysen's sixth report on the clinical and roentgen study o chronic habitual constipation.* The digestive disturbances fo which it is responsible seem to be distinguished by developing only after the chronic constipation is under way; by th fact that the pains, the cardialgia, are experienced at onc or soon after eating, and by the subsidence of the dyspepsi when the constipation is corrected. Cardialgia was noted i 73 per cent. of the women and in 35 per cent. of the me The female stomach seems to react with ptosis more tha the male stomach, while the stomach reacts with secretor disturbances more often in men than in women. Habitu constipation usually becomes installed between 15 and 2 or dates from childhood. Analysis of his cases indicates th the typical form of dyspepsia with habitual constipation ma be regarded as reflex disturbances set up by the constipate colon, colodyspepsia. In 150 cases of gastric ulcer, 109 ha a history of constipation but never so regular and stubbo as in the colon dyspepsia cases; men and women seem to equally affected. In a typical case of colon dyspeps described, the bowel functions were regulated, and regul functioning was maintained with massage of the abdome an abdominal band (*Neptuns Baelte*), cold sponging, and f in the diet after the dyspepsia had subsided. Six mont later the bowels were functioning spontaneously and t young woman has gained in weight and eats ordinary foo but no milk. There is still a tendency to cold hands and fe and occasionally headache.

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DUTIES OF THE DERMATOLOGIST *

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WASHINGTON, D. C.

Under ordinary circumstances it would be both easy and proper to point out many duties that confront the specialist in general and the dermatologist in particular; but in these times it seems necessary to mention only a few. Accordingly, five phases will be considered, namely, the duties of the special societies, certain duties to the patient that have not been sufficiently recognized, the need for developing more and better dermatologic clinics, the arsphenamin situation, and lastly the duties to the country.

THE WORK BEFORE DERMATOLOGISTS

For years many of us have felt that the various societies composed of specialists, as well as many of the special sections of the American Medical Association, have not fulfilled all that might be reasonably expected of them. They are rather pleasant social meetings with a sprinkling of good papers and some valuable discussion, both public and private, rather than beacons in the progress of science. Would it not be fair to ask that such societies should be the sources of authoritative information from which the general practitioner could gain help, from which the lay citizen could seek advice, or the government aid? A standing publication committee which should from time to time publish critiques or be prepared to answer proper queries would be valuable. Also it might be well to assign certain definite problems to members who are in a position to throw light on them: committee reports each year on certain important questions, such as radium treatment or the standardization of the Wassermann test might also be of extreme value. Of course the present is no time to act on such suggestions, but in the future it might be wise to consider certain of them.

DUTIES TO PATIENTS

In such a paper as this it is naturally impossible to discuss all that a specialist owes to his patients; nevertheless, one important thing must be emphasized, namely, the duty to recognize certain serious ailments that may be in the process of evolution. Those of us who have been interested in cancer propaganda have long maintained that the general practitioner, the internist and specialists in most lines have failed to note certain blemishes that might later develop into malignant conditions. Only too often does the specialist fail to realize that the condition which brings a patient under his observation may be but one symptom of some constitutional disease; the dermatologist may treat urticaria or a so-called acute eczema without knowing that the patient has a disturbance of the vegetative nervous system that is the direct cause of the local skin condition. Pruritis may be due to some disordered mental process. One noteworthy case of intractable eczema was directly due to a feeling of scrupulosity and hence excessive bathing, the primary mental condition being due to incest committed years earlier in life. Sweaty hands are frequently due to an oversecreting thyroid; sweating feet to weak arches; chronic urticaria to focal infections, syphilis or vagotonia, as well as to faulty digestion. If each and every one of us would more frequently refer his patient to a man who made a specialty of both physical and mental diagnosis, not only would more of our patients be relieved of cutaneous afflictions, but many a valuable man would be saved from later becoming a wreck.

POSTGRADUATE INSTRUCTION IN AMERICA

There can be no question that, in the past, certain cities in Germany and Austria have been the mecca for the training of American dermatologists. It is true that too often this has been a fad rather than a necessity; and, sad to relate, many a fledgling has learned to believe that all that is dermatologically good has and must come from Teutonic sources. Possibly if he had gone a bit deeper into his subjects he would have learned that frequently his professor or privatdocent was either too conceited or too ignorant to even know of the work that had been done in America, or that he wilfully chose to disregard it.

To some of us it has always been a marvel that more of us could not see through the folly of taking too seriously the work of a man who would dare to publish a bibliography of seventy-odd names, four French, one English, none American and the remainder German. However, it is extremely probable that the future dermatologist will not care to be trained in a city from which have emanated orders to use poisonous gases, to torpedo hospital ships and to bomb hospitals. In the United States we must prepare to train dermatologists and syphilologists, for the study of syphilis is coming into its own as the result of freer discussions necessitated by the war. We should now lay our plans to develop great clinics in which students and physicians can be thoroughly trained. Our dermatologic material has been too much scattered: in each city it should be more centralized for teaching purposes, so that the student can see a wealth of material. In addition, each dispensary should have its own laboratory attached, and there should be a number of hospital beds, both for severe dermatologic cases and for intraspinal work. Until we make up our minds to have fewer and better clinics we cannot hope to

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* Chairman's address, read before the Section on Dermatology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

give proper training, and it is distinctly up to the dermatologists to see to it that plans are now made.

THE ARSPHENAMIN SITUATION

There is no physician who does not remember how we Americans have been robbed as a result of the monopoly on arsphenamin (salvarsan). At present the situation is much better, thanks largely to the wisdom and foresight of one man, Jay Frank Schamberg of Philadelphia, a dermatologist. It is difficult to conceive of a treaty of peace that does not include the restoration of patent rights: when this time comes what must we pay for a drug that is many times more necessary than is diphtheria antitoxin? If we are thrown on the mercy of the German manufacturing house we need not expect prices that will enable the poor to be provided with it, and if by any chance the patent right should be assigned to the former distributors of the drug in this country, it is difficult to see how we should be any better off. As a proof of the latter point you are invited to read the testimony of Mr. Metz before Congress one year ago, when the abrogation of the patent rights on salvarsan was being discussed. Also, what guarantee should we have that a pure drug was being marketed? Certainly when a manufacturing house threatens to sue physicians for reporting unfavorable results, as the Farbwerke-Hoechst Company has done in the case of Dr. Sargent, we must believe that it is more interested in the financial than in the humanitarian side. As a public health proposition it is our duty to urge that salvarsan be specifically excluded when patent rights are being restored.

DERMATOLOGISTS IN ACTIVE SERVICE

Seven score and two years ago a great American patriot wrote, "These are the times that try men's souls." Once again do these words come home to every man of us, and each must ask himself, "What is my duty?" Many of our dermatologists have answered the question directly by entering one of the government services. Among these men are Pusey and Baum of Chicago, and Pollitzer, Fraser, Howard Fox, Fred Fox, C. M. Williams, Clark and Johnson of New York, the last of whom has recently died as the result of his devotion to duty. Still others are Wile of Ann Arbor, Dyer of New Orleans, Markley and Lingenfelter of Denver, Knowles and Gaskill of Philadelphia, Mook of St. Louis, Pudor of Portland, Sayles of Taunton, McBride and Dennie of Kansas City, Goldstein of Fort Smith, Chipman of San Francisco, and Oliver, Lee, Cheever and Howe of Boston, the last named having been killed in France. Also there are many others who have given freely of their time and strength in connection with the work of the draft boards or with local health problems. But for the rest of us, what is our duty? Certain men there are who cannot or should not offer their all. In this group may be placed those past 55 years of age, those who have some physical defect, those whose teaching or clinical positions cannot be filled, certain men in practice whose places cannot be filled, and some few who are in financial straits. Let us examine these criteria a little more closely.

Physicians over 55 are not considered eligible for the Medical Reserve Corps, and yet there are plenty of men past this age who are capable of doing hard work and who fill responsible positions at home. Many good men have been barred on physical examination because of some slight physical defect; some at least of these men could render valuable services in certain selected capacities. We all realize that under no circumstances can the Army be burdened with physicians who may break down under stress, and a rigid physical examination is an absolute necessity. A moment's thought will make all realize that physicians are a necessity to the community, and it would indeed be a short sighted policy that would permit our medical schools to be closed or which would deprive them of too many instructors. Furthermore, our clinics and hospitals must continue to render efficient service, for the continued good health of our population will be a great asset both during this war and in the more or less unsettled times that are sure to follow it. At the same time it is questionable if we do not have too many medical schools and far too many clinics. If certain of our schools could combine for the period of the war, many instructors could be spared; and if the weaker of our clinics and dispensaries should close their doors, only good would result. In practice there are a number of men whose services cannot well be spared. Many physicians in rural districts simply cannot be replaced at the present time. Men who are the only representatives of their specialty in a wide area may be vitally necessary, and some physicians to large industrial concerns would be more than sorely missed. There is now less financial excuse would gladly give part of their time for government has passed certain new legislation, but nevertheless it is hard for a physician who has borrowed money to educate himself, and who is now paying for a house and educating his children to accept a much smaller salary.

Many physicians in the classes enumerated above would gladly give part of their time for government work. It would seem perfectly possible for the Surgeon-General's Office to arrange that in the government hospitals, camps and cantonments there should be a visiting staff of civilian physicians, who should act in precisely the same capacity that many of them now act to the great civilian hospitals. They should, of course, be assigned certain definite hours and compelled to observe them. By such an arrangement as this several things could at once be accomplished: the physicians would not feel that they were remiss in their duty, troops would secure the very best medical attention, for specialists in various lines would be at their disposal, Army physicians would secure additional expert training, the medical schools could continue their work unhampered, the civil population would not suffer, and many Army physicians would be set free for more strictly military duties. At the same time we must all appreciate the tremendous difficulties that have been associated with the expansion of the medical corps and express a word of appreciation for the excellent work that has been done; this idea that has just been elaborated is not to be viewed in the light of a criticism but rather as a suggestion that many of us believe to be well worth considering.

A MOTTO FOR THE MEDICAL PROFESSION

Lastly, let us waste no time, but let us conserve our strength. Let us keep our tempers, let us not become hysterical, let us not be led into hasty judgments even though the medical mouthpiece of the Council of National Defense continues to utter fulsome fulminations. And in deciding what to do, let us be governed by one rule: Do what will be for the greatest good of the greatest number.

RELIABILITY OF OZONE IN SWIMMING POOL DISINFECTION *

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It is now well established that the combination of refiltration and disinfection of swimming pool water constitutes the standard procedure in the sanitary control of plunge baths. It is also well known that the combined procedures of refiltration and disinfection effect reductions in the cost of maintenance which, in the long run, make the installation of expensive apparatus an actual economy. Furthermore, it is well to state that refiltration can be relied on in a properly designed system to maintain the pool water free from suspended matter, and that ozone treatment will supplement this by bleaching dissolved coloring matter and by destroying bacteria.

In diseases, bacteria are discharged from the body in pus, mucus, feces or blood. The bacteria are usually protected by these substances from the destroying activity of such natural agencies as light and drying; and probably the success obtained by the use of strong oxidizing chemicals, such as gaseous chlorin, the hypochlorites and ozone, may be attributed to the power these substances have of destroying the organic material enveloping the bacteria. Methods applied without regard to bacteria protected in this way usually fail in practical operation, even though excellent laboratory results are obtained when artificial cultures are used.

In swimming pools, in which there is always a greater load of organic matter than in the average water supply, it is of particular importance to select powerful oxidizing agents as disinfectants. Of these powerful agents we should consider the halogens and ozone.

THE HALOGENS.

In large water supplies, gaseous chlorin and the hypochlorites have in a great many cases been used with perfect success. In smaller systems they have occasionally failed, owing merely to the fact that objectionable tastes and odors were produced in the water when a sufficient quantity of chemical was used to insure sterilization. In swimming pools in which large quantities of organic matter are constantly introduced into the water, correspondingly large amounts of chemical must be added to insure thorough oxidation and adequate destruction of bacteria. For this reason it has been quite usual to find either one of two conditions obtaining in a pool in which chlorin or its compounds are used—namely, the addition of insufficient chemical, resulting in inadequate purification, or the addition of a superfluous amount with the production of tastes and odors making the water at times almost unfit for use. Consequently while from the bacterial point of view the halogens are quite efficient in pool water purification, they frequently fail in practice because they tend to reduce the patronage and therefore the usefulness of the pool.

OZONE.

The addition of a powerful oxidizing agent to pool water, in such an excess as to insure destruction of bacteria, though leaving no objectionable trace in the water, is particularly valuable in pool disinfection. Ozone is the only economically produced chemical of which we know that can be relied on to destroy the bacteria, bleach the coloring matter, successfully attack the organic substances, and at the same time leave no objectionable substance in the water. In fact, the process thoroughly aerates the water and enhances its appearance.

There is, of course, nothing novel in the successful application of ozone to the purification of large drinking water supplies. Spalding[1] states that forty-nine large ozone plants abroad regularly deliver pure water to large municipalities. In France he cites twenty-six plants, in Roumania four, in Spain one, in South America three, in Germany seven, in Italy five, and in Russia three. The plant at St. Maur supplies the city of Paris with 24,300,000 gallons daily, the Bon Voyage plant supplies Nice with 6,480,000 gallons daily, the plant at Villefranche supplies 7,020,000 gallons daily, and the plant at Petrograd supplies 14,040,000 gallons daily, to mention only some of the largest. It is evident, therefore, that the use of ozone in pool water purification is merely another instance of its successful application.

TESTS.

The summary of a series of tests has already been set forth,[2] from which I quote in part:

> The bacterial counts in this pool (Twenty-Third Street Bath) were so low after continuous operation of the ozone machine that it was deemed advisable to add a large number of *B. coli* to the water in order to observe the efficiency of ozone on heavily polluted water. Accordingly a mass culture of *B. coli* was emulsified in salt solution and thrown into the pool. In order to secure thorough mixing of the bacteria with the pool water and to keep the pollution high, the circulating pump was shut down between 10 a. m. and 2 p. m., a long handled brush was used to stir the water, and this, together with the agitation produced by the bathers, resulted in a uniform mix. The pool was then operated as usual and two hours later the tests were made.

ONE PART OF OZONE PER MILLION OF WATER

(Note.—All bacterial counts are averages of 3 or more determinations.)

Using ejector:
- Bacterial count in artificially infected pool, 3,700 per cubic centimeter.
- After filtration and before ozonation, 1,800 per cubic centimeter.
- After ozonation, no growth in 1 cubic centimeter.
- After ozonation, no growth in 3 cubic centimeter.

In addition to plating 1 c.c. of the water delivered from the ozone tower, 3 c.c. samples were plated as well. In the majority of cases no growths were obtained.

Using blower:
- Pool water in artificially infected pool, 3,500 per cubic centimeter.
- After filtration and before ozonation, 1,540 per cubic centimeter.
- After ozonation, no growth in 1 cubic centimeter.
- After ozonation, no growth in 3 cubic centimeters.

The results, using the blower, are identical with the foregoing. We conclude, therefore, that when one part per million of ozone is used, either with an ejector or with a centrifugal air blower (which delivers more air) the pool water artificially contaminated with *B. coli* is sterilized.

If one-half part ozone per million of water is used, the ejector, delivering less air than the blower, gives better results. Indeed, one-half part per million seems to be ample for average conditions.

A recent extensive series of tests was made to obtain data on which to judge the reliability of the process over an adequate period of time. These tests were made on alternate days three times a week for a period of three weeks without renewing the water. The results are set forth in the accompanying table, so as to show the uniformity obtaining:

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* From the Research Laboratory of the New York Department of Health.

* Read before the American Association for Promoting Hygiene and Public Baths, Newark, N. J., May 15, 1918.

[1] Spalding: Application of Ozone to Water Purification, N. Y. State Dept. of Health, 1913.

[2] Manheimer, W. A.: The Application of Ozone to the Purification of Swimming Pools, Pub. Health Rep., 1918, 33, 267.

RESULTS OF TESTS

First Week		Second Week		Third Week	
Before Ozonation	After Ozonation	Before Ozonation	After Ozonation	Before Ozonation	After Ozonation
58	1	10,800	1	31	0
85	0	16,200	0	35	0
80	0	8,400	1	32	0
50	0	15,000	0	23	0
60	0	....	1	36	0
7,500	0	12	0	1,600	0
5,000	0	12	0	1,700	0
4,400	0	8	1	....	0
6,000	0	14	0	1,700	0
3,000	0*	21	0	1,500	1
12,000	0				
1,800	0	18	0	60	0
1,800	0	21	0	100	3
3,000	2	22	0	90	0
1,400	1	20	0	80	0
		32	0	80	0

* Two surface.

The attendance in this pool is exceptionally large, reaching at times 1,500 bathers a day. This necessarily causes high pollution. It will be observed that the water was delivered sterile, or nearly so, regardless of the counts before ozonation. In addition to this the water was bleached, gradually assuming a transparent blue, so that as the pool continued to be operated the appearance of the water was improved. Consequently where adequate refiltration is combined with ozone disinfection, the water may be retained in the pool for a considerable length of time, effecting a material reduction in the cost of maintenance. It should be stated, however, in designing a pool, that the capacity of the recirculation system should be proportional to the estimated attendance.

COST OF OPERATION.

The cost of operation for a 60,000-gallon pool is low. Only two items need be considered, the amount and cost of electric current, and the cost of the occasional replacement of calcium chlorid in the air dryer.

Alternating current must be supplied to the ozonator. If only a direct current is available, it must be converted into alternating current by means of a motor generator. This entails a current consumption of 2 kilowatts a day for a six-tube ozone unit (the unit to be used for a 60,000 gallon pool). The unit itself will consume only 2 kilowatts a day, so that if alternating current is available the cost of operation will be from 11 to 15 cents a day, allowing 1 cent for the replacement of calcium chlorid and figuring electric current at the rate of from 5 to 7 cents a kilowatt. If electrical current is manufactured on the premises the cost may be materially reduced below the figures stated. Where direct current must be converted into alternating current, from 10 to 14 cents (2 kilowatts) must be added to these figures.

It is obvious that the process is very economical in operation as well as reliable and automatic in control, and for these reasons is destined to wide application in the purification of swimming pools.

CONCLUSIONS.

Ozone is recommended for swimming pool purification because:

1. It is reliable as a disinfectant.
2. It is capable of purifying heavily polluted pool water.
3. It produces no objectionable substances in the water.
4. It improves the appearance and transparency of the water, permitting a longer continued use of the pool, a consequent reduction in the cost of maintenance, and a reduction in the hazard of drowning.
5. It is inexpensive in application.

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THE ACTION OF MIOTIC DRUGS ON EYES WITH INCOMPLETE SPHINCTER IRIDIS *

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In the literature of glaucoma and ocular injuries, there are contradictory opinions expressed on the effect of miotic drugs in cases of incomplete sphincter, especially in radial tears of the iris from contusions, leaving it a matter of conjecture whether such radial tears can be increased or diminished by the use of miotics. There is the same contradiction of opinion on the effect of mydriatics on radial tears. Regarding glaucoma, it seems generally to be assumed that the beneficial effects of the miotic drugs are due entirely to the contraction of the sphincter, and that these beneficial effects are abolished if the sphincter is not intact and functionally capable. On the other hand, it is frequently advised that treatment with miotics be given after iridectomy, in case of insufficient effect from the iridectomy, thus recognizing — or hoping — that the miotics may still be effective.

Elliott,[1] in objection to complete iridectomy in sclerocorneal trephining for glaucoma, says:

> It deprives the surgeon of the power of inducing strong miosis should he require to do so.

Johnson,[2] on the operative treatment of glaucoma, says:

> Suppose that the iridectomy has already been performed without permanently reducing the tension, what is one to do then? The ring of the inner circle of the iris has been divided and miotics will no longer act effectively.

Fuchs[3] says:

> *Eserin* . . . in many cases excites violent headache, which may lead to vomiting. These symptoms are not to be regarded as due to a general poisoning, but are caused by the marked contraction of the pupil, by which the nerves of the iris are strongly pulled upon. Hence, the symptoms are absent when marked contraction of the pupil fails to take place—e. g., in atrophy of the iris or in solutions of continuity of the sphincter (colobomata, fissures, etc.).

In the later edition, this paragraph is changed:

> *Eserin* frequently excites severe pain in the eyes and head, painful contractions in the lids, and even nausea and vomiting. These are not symptoms of poisoning, but are the results of the great narrowing of the pupil and the contraction of the ciliary muscle, by which the ciliary nerves are pulled upon. This bad by-effect, therefore, usually is absent when

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* Read before the Section on Ophthalmology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

[1] Elliott: Ophthalmoscope, 1914, **12**, 587.

[2] Johnson: Arch. Ophth., 1914, **43**, 8.

[3] Fuchs: Textbook of Ophthalmology, Third American Edition, 1908, p. 308; Fifth American Edition, 1917, p. 389.

for any cause, the eserin fails to produce any marked contraction of the pupil.

Beard,[4] writing of anterior sclerotomy with conjunctival bridge, says:

> A prolapse under the existing conditions could not be adequately dealt with, and an iridectomy would be undesirable in view of the possible need of miotics at a later period.

Again, on the efficiency of iridectomy:

> In the event of a relapse, it precludes the use of miotics.

Bradburne[5] says:

> This operation (basal buttonhole iridectomy), in that it leaves the pupillary border of the iris intact, allows the subsequent employment of miotics if such be deemed necessary.

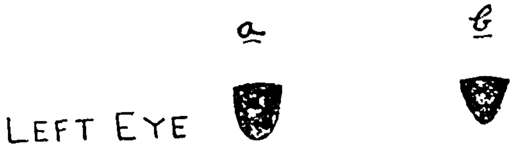

Fig. 1.—Size and shape of pupil (*a*) before and (*b*) after physostigmin.

Bernheimer,[6] reporting a case of congenital anomaly of the iris, observed six large round indentations of the pupillary margin, and within these three or four parallel folds of iris tissue which corresponded to smaller indentations. He says:

> The fact that the pupil reacted to light and contracted upon eserin, although not maximally, proved that the changes were only superficial disturbances of the arrangement of the tissue of the iris, and did not involve the sphincter.

Wuerdemann[7] argues both ways. Under "Injuries to the Uvea from Blows":

> If radial tears are seen, then atropin is contraindicated and eserin should be used to contract the pupil and draw the tears closer together.

Under "Lacerations of the Sphincter":

> We would theoretically imagine that miotics would bring the torn pupillary margins together and cause healing, but such never happens. Atropin, however, is contraindicated, as its action would only tend to deepen the tear.

Under "Mydriasis and Miosis Traumatica":

> If the pupil fully dilates to atropin, there has been no lesion of the dilator muscle; if contracting fully to eserin, none of the constrictor.

The accompanying illustrations show the actual size, by measurements, of pupils in three eyes before and after the use of eserin.

In the case illustrated in Figure 1, iridectomy had been done several years before for glaucoma, later extraction of the cataract was done, and still later sclerocorneal trephining, according to Elliott, all without arrest of glaucoma. In this case the tension-reducing effect of physostigmin (eserin) was demonstrated by the tonometer, which on one occasion measured the tension 39 mm. before, and 18 mm. after the use of physostigmin. That miotics can influence the tension even after iridectomy is probably generally recognized, and their use is usually advised after iridectomy.

In the case illustrated in Figure 2, iridectomy had been done on both eyes of a man, aged 20.

While measurements so small cannot be made with perfect accuracy, they show definitely a diminished size of the pupil and, especially significant, a narrowing of the coloboma. In both cases, and also in others, physostigmin has produced its other characteristic symptoms in addition to miosis — aching, spasmodic jerking pains, and spasm of accommodation in young persons. These symptoms, therefore, must be due to the action of the physostigmin on the ciliary body as much as to its action on the pupil. In this connection must be considered the question of the paralytic or relaxing effect of physostigmin on the dilator fibers of the iris, coincident with its spastic effect on the sphincter. In connection with the reduction of tension by physostigmin in an iridectomized eye is to be considered the mechanism of this change of tension, and the rôle in it of the ciliary body, since it evidently is not entirely due to the action of the sphincter. The conflicting opinions on the use of miotics and mydriatics in cases of injuries to the iris, especially radial tears involving the sphincter, are based mainly on theoretical considerations. It can be assumed that miotics, by diminishing the size of the pupil, can bring the margins of the tear together, and so promote healing, or that mydriatics, by relaxing the sphincter, can produce the same result. It can as reasonably be assumed that miotics, by exciting strong action of the sphincter, can pull the margins of the tear apart and so prevent healing, or even increase the tear; or that the same result can be brought about by the dilatation of the pupil produced by mydriatics. As a matter of clinical fact, however, it is probable that mydriatics and miotics have no power to increase or diminish the extent of the iris tears. Hence, the use of mydriatics or miotics is to be determined by other considerations. Usually mydriatics are indicated because of iritis, and any permanent mydriasis resulting is to be regarded as due to the injury, and not to the use of mydriatic treatment.

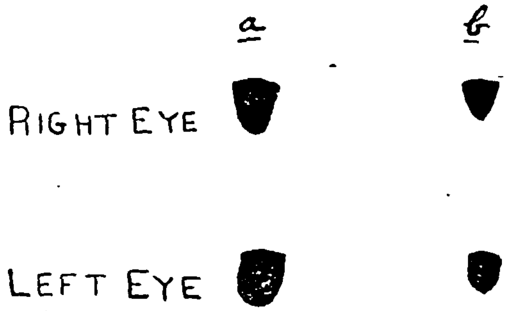

Fig. 2.—Size and shape of pupils (*a*) before and (*b*) after physostigmin.

CONCLUSIONS

Physostigmin can produce contraction of the pupil, narrowing of the coloboma, and reduction of the glaucomatous tension in iridectomized eyes.

The contraction of the pupil and coloboma indicates that there is a relaxing effect on the radial fibers of the iris, as well as the spastic effect on the sphincter.

The action of the ciliary body is a factor in the reduction of the glaucomatous tension produced by physostigmin.

It is probable that miotics (and mydriatics) have no power to increase or diminish the extent of radial tears of the iris.

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[4] Beard: Ophthalmic Surgery, Ed. 2, 1914, pp. 637, 656.

[5] Bradburne: Ophthalmology, 1917, **13**, 205.

[6] Bernheimer: Ophthalmology, 1914, **10**, 306 (abstr. by Zimmermann).

[7] Wuerdemann: Injuries of the Eye, 1912, pp. 568, 579, 580.

ABSTRACT OF DISCUSSION

Col. Frank C. Todd, Minneapolis: Dr. Curdy especially relates this subject to the treatment of glaucoma, and calls attention to the fact that even where the sphincter has been cut, some contraction of the pupil takes place. It is well known that miotics, such as eserin, produce the maximum contraction of the pupil, and a maximum contraction of the pupil could not be produced unless two things take place, namely, a paralysis of the fibers that dilate the pupil, and a stimulation of the fibers—that is, of the sphincter—that contract the pupil. So it has this combined action. That is further confirmed by the fact that in the case of paralysis of the sphincter, the use of eserin will produce medium but not maximum contraction of the pupil, because it relaxes the dilator fibers. Then why should we not expect the same effect if the sphincter fibers are cut, when we have a coloboma? that is, a relaxation of the dilator fibers may take place.

This brings us to the practical point of the wisdom of producing a complete coloboma in the operation of trephining for glaucoma. I have thought that I have made some failures to permanently reduce tension where I have made too small an opening in the iris. Perhaps you remember that Elliot considered that iridectomy was of no value in his glaucoma operations, and when the iris did not present he was not in the habit of cutting the iris out. My experience has been that in some of those cases in which a sufficient amount of iris was not removed, the plugging of the hole might take place more readily afterward, and I have preferred to have a large coloboma than to have a very small one. But I do think that ideally the wide coloboma, produced with the Elliot operation, with the retention of the pupil, is more advantageous, if only for the fact that we can get more of a contraction of the pupil later by the use of a miotic, if that seems necessary. That is to say, if we can get a coloboma like this (illustrating by means of the blackboard), leaving intact the marginal fibers, we then have an opportunity to produce a maximum contraction of the pupil, if it seems wise, for after treatment to further reduce the tension.

Dr. Robert J. Curdy, Kansas City, Mo.: It is true, as Dr. Todd says, the maximum contraction of the pupil cannot be produced if the sphincter is interrupted, but in the treatment of glaucoma with miotics, we are not trying to produce contraction of the pupil; we are trying to cure the glaucoma, and it is the purpose of this paper to show that miotics can be effective in the treatment of glaucoma notwithstanding the interruption of the sphincter of the iris.

Infant Mortality in the Philippines.—Sixto Y. Orosa, M.D., in an article in the November number of *Revista Filipina de Medicina y Farmacia* gives the results of his study of 334 families in Jolo, with a population of 8,287, with reference to infant care and mortality. He shows that the average family has three children, one of whom dies. With reference to feeding, out of 1,117, 924 were breast fed, 109 bottle fed and 84 given mixed feeding. Of the 924 children breast fed 632 lived, 68 per cent.; 292 died, 30 per cent. Of 109 bottle fed, 86 lived, or 78 per cent., and 23 died, or about 21 per cent. Of the 84 given mixed feed, 50 lived, or nearly 60 per cent., and 34 died, or 34 per cent. Thus, he says, notwithstanding the ignorance of the average mother, the percentage of deaths of those artificially fed was 21 or 22 per cent. as against 30 per cent. for the breast fed. The bottle fed also had less deaths than those given mixed feeding. Condensed milk is generally employed in artificial feeding. Out of 349 deaths, 165 occurred before the age of 1 month, or nearly 50 per cent.; 286 occurred before the child reached 5, or 82 per cent., and 336 deaths occurred before the child reached 15 years, or over 97 per cent. Infantile convulsions is among the chief and first causes of death of infants, and their mothers usually show signs of beriberi. The infant becomes blue and is seized with convulsions. The condition is called "alperesia." Intestinal diseases, malaria and respiratory diseases follow in order of importance as causes of death, and syphilis and malaria are important causes of abortion, of which there are many cases.

THE RELATION OF HEREDITARY EYE DEFECTS TO GENETICS AND EUGENICS *

LUCIEN HOWE, M.D.
BUFFALO

Of late years, while trying to learn something about ocular muscles, I have been confronted often by questions concerning heredity. I have found, as others doubtless have, three, four or even more persons in the same family with a similar form of heterophoria, heterotropia, predisposition to ocular fatigue, or similar abnormal muscular conditions. It seemed impossible to study these anomalies satisfactorily without first halting to learn something about that mystery which we call heredity.

It is understood that "genetics" is a general term including everything that pertains to generation. Heredity is more specific, dealing with "the organic relationship between generations." As defined by Davenport, "it is the phenomenon of the recurrence of traits in blood relatives due to the persistence of their determiners in the germ plasm." Eugenics refers, of course, to the improvement of a race by selected breeding.

It is not possible here to give any systematic account of the studies already made of hereditary eye defects, except to mention the classic work by Groenouw,[1] the interesting histories collected by Nettleship, the more recent bibliography by Loeb, with the exhaustive articles by him, or those by Libby and others. The point is that we ophthalmologists have been content thus far with reporting family histories without attempting to relate those histories to other facts, now well established by geneticists.

Meanwhile, the science of modern genetics has come into being and has developed rapidly, especially in its relation to defects of the eyes.

Davenport[2] includes the following conditions: degeneracy of the cornea, anomalies of iris, glaucoma, displaced lens, cataract, pigmentary degeneration of the retina, atrophy of the optic nerve, night blindness, color blindness, reduction in size of the eyeball, megalophthalmus, myopia, astigmatism, paralysis or imperfect development of the muscles of eye and lids and nystagmus.

In view of the vastness of the subject and the brevity necessary in our transactions, my objects here are to:

1. Formulate a plan by which we may relate our clinical facts to the data of genetics and eugenics.
2. Show how each ophthalmologist can contribute something to our common fund of knowledge concerning it.
3. Give the results of my own studies thus far in the form of exhibits with the presentation of the paper, and publish those results later, separately. That saves time at the meeting, and space in our transactions, but still gives credit, if any there be, to our section for priority in the work shown by the exhibits.
4. Suggest a plan which may prove practicable for preventing to some extent hereditary blindness.

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* Read before the Section on Ophthalmology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

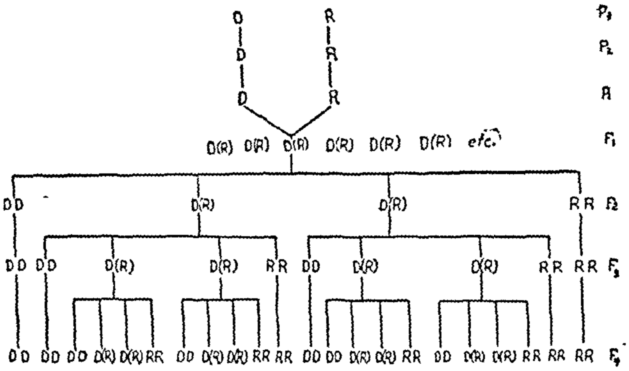
[1] Groenouw, in Handbuch der gesamten Augenheilkunde, Graefe-Saemisch, Ed. 2, Part 1, **11**, 415.

[2] Davenport, C. B.: Heredity in Relation to Eugenics, New York, Henry Holt & Co., 1911.

The plan to attain these four objects is to:

1. Bring the bibliography to date.
2. Arrange it according to diagnoses.
3. Add new family histories of such eye defects.
4. Chart certain histories reported previously only in narrative form.
5. Compare the relation of such defects with the mendelian or other principles of heredity.
6. Show the importance of a differential diagnosis between defects really hereditary and those due to infection (syphilis).
7. Suggest a plan for the prevention of hereditary blindness by sequestration, or by sterilization if the transmitter of the blindness so elects.

The reassuring statement should be made at once that it is not intended to cover all of this ground in this paper. For example, the first and second steps in the proposed plan are represented by what may be called Exhibit A. This is a bibliography in the form of a card catalogue. The literature up to 1901 was collected and arranged, according to diagnoses, by Groenouw. That list contained 324 references. Loeb published his bibliography in 1909, but as his list partly duplicated that of Groenouw, and was arranged alphabetically — not according to diagnosis — and as an assistant has found over 200 other real or supposed family histories of heredity, it seemed best to make a new list from 1901 and rearrange all according to diagnosis. That constitutes the present list of over 700 titles brought practically to date and arranged on a unified plan.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Schematic outline of Mendel's law.

The third step is represented by Exhibit B. This is a group of twenty-four charts of new family histories of hereditary eye defects. These were obtained by examining the files at the Eugenics Record Office of the Carnegie Institution of Washington at Cold Spring Harbor, N. Y., and acknowledgment is here due to the director, Dr. Davenport, for the unusual opportunity thus afforded.

The fourth step is represented by Exhibit C. This is a collection of over thirty charts of hereditary eye defects. These histories were published in narrative form, and as such were difficult or almost useless for study or comparison. A few charts already published were also added to show good examples of a defect which is really hereditary and one which is not, and also to show when a defect is "dominant" or "recessive." The importance of this differentiation will appear later.

It is possible now only to mention these three exhibits. They will be explained in detail when published.

We come then to our fifth step. To state this in slightly technical terms, we ask, does a certain chart suggest in any degree the mendelian law of descent? If so, is the defect dominant or is it recessive? Or does the chart show an example of sex linkage, or are other principles of heredity involved? These are new terms to many of us, but in this paper we have to take for granted a knowledge of the wonderful law discovered by that extraordinary character, the monk, Gregor Johann Mendel, and also what that law means to students of genetics of today.

THE MENDELIAN LAW

An example of mendelian descent, as demonstrated in the eyes of fowls, will recall the more important points: If one fowl having a dark red iris is mated with another that has a gray or pearl colored iris, the descendants in the first generation, called technically the first filial generation, and usually indicated F_1, will show red irises slightly mottled with pearl. That is, it happens that the red iris in poultry "dominates" almost entirely over pearl. But if members of this F_1 be bred with each other, then in the second filial generation, or F_2, we find, on counting the offspring, that about one fourth have their irises red, one fourth of them pearl, and half have mottled eyes. If the red "domination" were complete, then the proportion would be three red eyed to one pearl; but breeding tests would show that, on the average, two thirds of those with red eyes were hybrids. If now, we inbreed these F_2 individuals, we find when a red-eyed fowl is bred with a corresponding red-eyed fowl, the progeny are all red eyed, for any number of generations. Also, when the pearl-eyed fowl is bred with a pearl-eyed fowl, the progeny are all pearl eyed for any number of generations. But when two of the intermediate type in F_2 are inbred, the eyes of their progeny in F_3 are not all red, but their progeny in F_3 break up into one red, two mottled and one pearl, as in F_2. When these groups in F_3 are again inbred, we find in the succeeding generation F_4 the same behavior.

The mendelian law is usually stated briefly by letters. Thus, if we denote the dominant parent having the red iris by D, and the recessive parent having the pearl iris by R, the offspring in F_1 is indicated by D (R), the R being in parenthesis to show that it is recessive to D. The hybrid D (R) when inbred gives offspring in F_2 in the ratio, DD + D (R) + D (R) + RR. The first DD breeds true. The RR also breeds true. But each of the two intermediate D (R)'s produce in F_3 a corresponding series of DD + D (R) + D (R) + RR.

The mendelian law is also illustrated by a diagrammatic arrangement of the letters which indicate the groups of four. As none of the published diagrams seemed to make the sequence entirely clear to me at first, I have outlined the details of Mendel's law as shown in the accompanying diagram. It may also prove of assistance to other students, even if it be rather schematic.

OTHER PRINCIPLES OF HEREDITY

Sex linkage is another principle of heredity to which attention may be called. This is the tendency which certain characteristics have to develop exclusively or predominantly in the male members of the family, especially in certain crosses. For our purpose, however, it must suffice to recall the fact that among the diseases appearing predominantly or exclusively in the male line, at least in certain families, are atrophy of the optic nerve, color blindness, night blindness and probably other defects.

It is impossible in a brief statement like this to give even passing notice to other principles of heredity which are of undoubted importance in a study of eye defects. Among these may be mentioned blended and excessive inheritance, reversion, predisposition to disease, immunity, etc. But it is doubtless the case that even our present knowledge of these principles will assist us in understanding why in certain families this or that defect of the eye does appear to be dominant, and on the other hand, why in certain other families the same defect appears to be more distinctly recessive. Thus by charting the knowledge which we have thus far acquired of eye defects and comparing those charts with a knowledge of the principles of heredity, it is probable that the relation between the two will become more apparent.

APPROACH TO THE STUDY BY THE OPHTHALMOLOGIST

One of my main objects, as already stated, is to interest others, if possible, in this subject, so that they may help to solve questions that can only be hinted at here. Therefore, it is in order to indicate briefly how the study can be approached by any ophthalmologist.

As to a theoretical knowledge of heredity, it may be of assistance to mention a few books which have been found useful. Herbert's "First Principles of Heredity" gives an outline of the entire subject. Castle's "Genetics and Eugenics" is more elaborate and technical. Davenport's "Heredity in Relation to Eugenics" is especially interesting and gives a number of data relating to hereditary defects of the eye.

A short, systematic course of reading like this gives a theoretical idea of the principles of heredity sufficiently definite to enable the ophthalmologist to discern some of the relations between a given principle or line of descent and a given group of eye defects.

Theoretical knowledge is, however, second hand mental furniture. The best way to learn these principles and one vastly more interesting is to supplement the reading with at least a few experiments.

The breeding of eye defects is easier than most persons imagine. Chickens and pigeons are the best subjects for such experiments.

By advertising in the *Reliable Poultry Journal* and other trade papers, it has been possible to obtain for the parent stock more than a dozen specimens of eye defects. These included corneal irregularities, and variations in the color of the iris and in the position of the eyes and of the pupil. The different pens of chickens at a small place, known as Mendel Farm, on the lake shore near Buffalo, have proved to me a source of much interest and enlightenment.

The breeding of dogs has not been found satisfactory. Eye defects are rare, the generations slow and the litters small. For similar reasons, cats are undesirable. It is probable, however, that interesting results could be obtained by breeding white cats which have blue eyes—such cats being often deaf. This fact had been already observed by Darwin and has been the subject of breeding experiments by Dr. Graham Bell.[3]

The eyes of the small fruit fly, *Drosophila ampelophila*, have proved most interesting. I am indebted to Professor Morgan of Columbia for parent stock, the blind variety of which I bred through more than twelve generations.

PRACTICAL VALUE OF THE STUDY

The average reader of this paper may say that such a glance at the principles of heredity may be curious and possibly interesting, but of what practical use is it?

Of course, we never find a typical mendelian ratio in the human species, because brothers and sisters never marry. But an approach to these ratios we do find constantly, and that law furnishes an important guide, not only in recognizing heredity itself in a given family history, as distinguished from an infection, but in also indicating when the defect is dominant or recessive. In other words, this relation between genetics and ophthalmology throws light on the differential diagnosis (the next step in our study), and is very decidedly practical in connection with eugenics.

With this reassurance as to the reason for continuing, let us pass to the examination of family histories to determine whether a given defect is in reality hereditary, or whether it is due to infection from syphilis or other causes.

It would necessitate a rather long digression to show just how this differential diagnosis is made. Suffice it to say that our criterion is the technical definition of heredity given at the outset. The fact is that a very considerable proportion of defects which we all supposed formerly were hereditary are probably not hereditary, but the effect of some infection more or less obscure. An excellent example of this is a family history of aniridia reported by one of the oldest and best known members[4] of this section. The author and all other ophthalmologists accepted this as an undoubted example of heredity, but competent geneticists now demonstrate that to be highly improbable.

Other diseases besides syphilis, or susceptibility to them, undoubtedly are transmitted from parent to offspring, and with these diseases we should include the effects of alcohol. In a word, caution is necessary in our diagnosis. We find, too, that even many of the muscular anomalies which seemed to be hereditary, and which prompted this whole study, are not hereditary after all.

Having thus collected various family histories, even those said to be hereditary, classified them, added to their number, charted them, studied the relation of genetics to these histories, and having seen the necessity of more exact diagnosis, we can now leave this imperfect sketch of the relation of eye defects to genetics, and pass to the eugenic aspect of the subject. The literature concerning this is scanty and confused. It will tend to clearer thinking to define a few terms. From the standpoint of eugenics, eye defects may be divided into two groups — the minor defects, or deformities, and major defects, or blindness.

The term "hereditary" we should also define more exactly as including two groups—one in which the recurrence of the defect is only "possible," especially when that defect is "recessive," the other in which its recurrence is "probable," especially when that defect is "dominant." Evidently, therefore, we have as many conditions to deal with as there are combinations, in pairs, of these four factors.

Still another factor enters into the problem—the personal equation of the parties to a marriage contract. For when two persons contemplate matrimony, it can usually be taken for granted that their judgment has, for the time, taken wings. Professor McCready, in his lectures at the College of Physicians and Surgeons, used to say his case records showed that for various reasons he had advised one or both parties against marriage some sixty-eight times; and his records also showed that sixty-eight times the couples went almost straight to the altar.

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[3] Bell, Graham: Tr. Otol. Soc., 1885, 3, 478.

[4] Risley, S. D.: Hereditary Aniridia, The Journal A. M. A., April 17, 1915, p. 1310.

But temporary obsessions by those who ask an opinion is no excuse for inability to advise intelligently, or, if necessary, to restrain persons from a fatal mistake. Therefore, the other four factors in our problem demand all the more careful study. While the difference between a simple deformity and blindness is evident, it is not easy to say whether the recurrence of a given defect is "possible" or "probable." Our decision, then, must be based on three groups of data: first, whether the defect is inherited as a dominant or a recessive; second, whether it is a sex-linked characteristic, and, third, whether both families show the defect.

A few illustrations will show how these four cardinal conditions in our problem may serve as the basis for an opinion by an ophthalmologist when he is called on to give advice in the case of a proposed marriage. Thus:

A. When we have to do only with a deformity, and its reappearance is doubtful, no special objection need be raised.

B. When we have to do only with a deformity, and its reappearance is probable, the parties to the marriage should both be warned of the probability of the reappearance of that defect in their offspring.

C. When we have to do with blindness, and its reappearance is doubtful, a stricter attitude toward the union can be assumed.

D. When we have to do with blindness, and its reappearance is probable, the question assumes its most serious aspect. If the family history shows that this defect is in reality dominant, then half the children on the average will develop the defect; or even if the defect is recessive, but occurs in both families, the danger is practically the same.

Another phase of the same problem is presented when a couple is already married, and with little or no history on either side of eye defect; yet in spite of that, for reasons which we do not know, one child after another, blind or partly blind, is born to these parents. This congenital blindness is in one way quite different genetically from hereditary blindness, but from the standpoint of eugenics, families with hereditary and with congenital blindness may be considered together as one group and classed as hereditary. It is desirable to appreciate how important this group is, but space permits here only the categorical statement of a few facts, which, properly presented, would fill a small volume. These facts are:

(*a*) The number of this group in the United States is considerable. It has been estimated at about 8,000 and upward. According to the census of 1910, the total number of blind was 52,272. Counting unavoidable and admitted errors in that census, the results of subsequent surveys, and increase of population, the National Committee for the Prevention of Blindness estimated the number of blind in 1917 at from 100,000 to 110,000. According to the data given by Best in his exhaustive and recent study of the blind in this country, the proportion of hereditary and congenital blind is considerably larger than here stated. But in giving estimates, the minimum limit is evidently the safest.

(*b*) The cost also is considerable. According to statistics carefully collected in Massachusetts and elsewhere, the average cost per year of each blind person in and out of institutions is at least $475. This gives us a total annual cost of some $3,800,000.

(*c*) It is unjust to the blind to allow them to be brought into existence simply to lead miserable lives.

(*d*) It is unjust to taxpayers to be compelled to support them.

(*e*) The longer we delay action to prevent this blindness, the more difficult the problem becomes.

(*f*) A large part, if not all, of this misery and expense could be gradually eradicated by sequestration or by sterilization, if the transmitter of the defect preferred the latter. An idea of this plan is given by the somewhat similar one for dealing with feeblemindedness. In 1913, laws for sterilization, under certain circumstances, had been passed in twelve states and proposed in nine others. Bulletin 10 of the Eugenics Record Office, Cold Spring Harbor, L. I., N. Y., gives a map showing the status at that time of such legislation. Where such eugenic laws have been enacted or favorably considered, probably existing laws could be properly amended or new laws passed, to prevent this form of blindness. The same bulletin gives the form of a model law for this purpose. It was prepared by committees composed of the most eminent physicians, surgeons, sociologists, students of genetics and similar experts in this country. That law could be made applicable to the prevention of hereditary blindness, but with an important difference, which makes the prevention of this form of blindness comparatively easy and inexpensive. No legal action is essential until after a marriage has been found to produce blind children, and even then sequestration of the transmitter of the defect may be substituted for sterilization. Moreover, if this sequestration is of a kindly nature, with congenial occupations suited to the intelligence and social tastes of the subject, the sense of restraint is slight, since it is reduced to the minimum. This is not theory but experience, as shown especially by the colonies for the feebleminded established by Dr. Charles Bernstein of the State Custodial Asylum at Rome, N. Y.

WHAT ARE WE GOING TO DO ABOUT IT?

In other words, we have all this misery and expense, both of which are largely unnecessary; we have also an effective method of relief prepared by committees of our foremost experts and already well supported, in principle, by public opinion. What are we going to do about it? That is the question at last forced on ophthalmologists—especially on the Section on Ophthalmology of the American Medical Association. Shall we complacently continue to do nothing, thus retarding social advancement and even ophthalmology itself? The answer to this question involves many details, both of principle and of method, far too complicated for discussion now. But in executive session a motion will be made for the appointment of a committee to report on this subject another year. If at that time or later, some plan can be formulated for the prevention of this form of blindness, it will perhaps seem worth while for us to have directed our attention now, even in this hasty manner, to the relation of hereditary eye defects to genetics and eugenics.

ABSTRACT OF DISCUSSION

Dr. Horatio H. Newman, University of Chicago: This occasion gives me an opportunity of expressing an idea that has long been at the back of my mind, that cooperation between the professional ophthalmologist and the professional genetecist might lead to far reaching results in both fields. This idea was suggested to me some years ago by a piece of genetic work which fell into my hands quite accidentally. While instructing a class in genetics at the University of Texas I dealt with night blindness as an example of one type of heredity. I made a statement that night blindness was a partially sex-limited character, appearing in every generation, but largely restricted to males.

After the class a young woman said that there was something like hereditary night-blindness in her family, but it did not follow the law stated. I found that there was quite a large family connection who were night-blind and that the defect was inherited as a sex-linked character. This led me to work out the data of optic defects for five generations of this family, which was published some years later in the *British Journal of Genetics.* The point I wish to bring out is the great difficulty that I had as a genetecist in handling that data. If I had had the cooperation of an ophthalmologist the task would have been greatly simplified. As it was I had to depend on advice kindly offered by Nettleship, advice which though meager was of the utmost value.

That, then, will bring out my point, that it would be a very valuable thing if the ophthalmologists and the genetecists could actually get together in working out some of these problems that concern these two fields.

I think I am safe in saying that nothing equals the data of ophthalmology for the study of human heredity. And particularly is that true in connection with sex-limited and sex-linked heredity. We have found in our experiments on a number of the lower animals, that some characters are inherited in a peculiar way in a sex-limited and others in a sex-linked fashion. A sex-limited character is one that is limited to the male sex, while a sex-linked character may, under certain conditions, appear in females also. The mechanism of sex-linked heredity has been worked out and may be explained by a diagram (explanation of diagram omitted). This illustrates but one of the many interesting phases of the genetics of optic defects.

Dr. F. Park Lewis, Buffalo: Dr. Howe's paper naturally resolves itself into three distinct parts: that dealing with the mendelian law, which is a science in itself; that dealing with its application economically and socially, and the question, finally, as to what shall be done about it.

The question of the mendelian law is one of the most interesting, probably, of all topics that has come before the scientific world in a generation. Our knowledge of it dates from the beginning of the present, twentieth century, although Mendel wrote in 1881 an essay in which he demonstrated on peas the application of his law. This essay was buried in the archives of a scientific society for all the years intervening between that time and 1900, when Bateson and others, working along the same lines, brought it to the surface and found that this Austrian monk had hit on a law of heredity the importance of which can scarcely be overestimated.

Its application in ophthalmology to the development of the eye is particularly interesting, but I shall have to speak only on the economic side of it, which seems of great importance as a war measure.

The most important product now which we are raising—and we are now considering the conservation of our products—is that of our children. What is done in regard to the development of our children during the next twenty years connotes what kind of a population we shall have twenty years hence. During the last three decades there has been a very rapid decrease in the birth rate among all English speaking people, as there has been among the French, until at the beginning of the war, in 1914, the proportion had been reduced from thirty-five in a thousand in England, to about twenty. The large number of males who are taken out of active service and sent abroad will still further decrease our birth rate during these years of war.

The classes of people whose birth rate continues high as a rule are those who live under the most unsanitary conditions. In the Polish population, where it is very crowded, the average number of members in a family is eight. In what we call the better classes of people, those who are more intelligent, the average number of children in a family is but three. It has been found that where people live in four room tenement houses, the number of children who live is about thirty-five in a thousand. Where they live in three room tenement houses the proportion is about thirty in a thousand. Where they live in one room tenement houses, the number who live is still further reduced. So that the housing problem means that we are losing the productive element in our population in very large proportion, just to the degree that we decrease the sanitary conditions under which they live.

Moreover, where defects of any kind exist, such as feeblemindedness, defects in vision or other characteristics, the grouping of people together is very apt to make those who are sufficiently closely related to have the same traits, and the possibility of perpetuating those traits, brought together, so that they are apt to marry. It happens that during the last twenty-five years I have been connected with the School for the Blind, and I have seen during those years the effect of the perpetuation of the defects of blindness in the most remarkable degree. Four generations ago two congenitally blind people married. The progeny, the result of that marriage, have been coming back to the school during those twenty-five years, until we have now had from one family, seventeen, and from another family of cousins, seventeen. Without going into the details of the economics involved, I may say that single marriage has cost the state of New York more than $50,000 for the education and maintenance of all of these blind people.

I was interested in the case of the prevention of ophthalmia neonatorum, because of the multitude of cases that I found in the School for the Blind who were blind as the result of birth infection. The number of children that are blind as the result of congenital atrophy was greater, and always has been greater than that resulting from ophthalmia neonatorum.

Dr. Clarence Loeb, Chicago: Assuming the correctness of the mendelian theory, we must remember that it was worked out with plants and animals, where there is more than one offspring of a single mating. In man, however, a single mating, as a rule, results in one offspring, seldom two and very infrequently three or more. I do not see that it necessarily follows that the facts in the former case, that is, where there are more than one offspring at a birth, are true in a case in which there is only one. But granting that the facts will be the same, the theory further demands that two of the same generation must mate, which never takes place in man under present circumstances. Formerly, and in the far dim past, brothers and sisters would mate, but at the present time this never takes place.

How can we assume that the mating of two strains, as in the case of the marriage of two blind, unrelated people, will have the same effect as the joining of two strains from the same source? As a matter of fact, the histories of the cases in which two blind parents, whether related or not, marry, show that the percentage of their children was no greater than when one blind and one seeing person married. Furthermore, the mating of the red sweet pea for example, with the white sweet pea, is the mating of normal characteristics, while the mating of a blind with a seeing person, for instance, a cataractous person with a seeing person, is the mating of a normal with a pathologic condition. How do we know that the theory will work out under those circumstances?

The histories of these cases show that it does not, as the percentage of children affected, whether there was more than one child from one family or not, ranges anywhere from 100 per cent to no per cent.; that is, all the children, to none of the children. There is no definite rule that can be followed. Take up a history and you are as likely to find all the children of such a marriage become blind as only one or none.

It is always possible for a theory to have exceptions, but where a theory such as Mendel's theory is applied to the inheritance of ocular conditions—and that is all I am speaking of; I am not talking about that theory as a whole—and you have so many exceptions, as the history of all the cases shows, I must say that I do not see that the mendelian theory can be applied, and that we can assume from that what the results will be as to the offspring. The only thing I can see is to collect as many cases as possible of the results of such a marriage, and from the number of children calculate what percentage is likely to become involved. If the mendelian theory were true as far as man is concerned, then as Dr. Howe suggests, instead of sterilizing the person, it would seem to me the thing to do is to allow a person who is affected to marry and then find out from his offspring which marry the ones who propagate the diseased condition, and sterilize them or prevent them from marrying and allow the other strains to continue to marry and have children.

Dr. F. G. Stueber, Lima, Ohio: It was Dr. Wiley who made the statement, that as a people, we have been giving too much attention to the breeding and raising of hogs, rather than to that of our children; but he thought that mankind should come next. Not to underestimate the other papers I regard this as one of the most important subjects, and believe it is the duty of every normal individual to contribute what he can for the betterment of the race. It is said, every child has the right to be well born, and I think it devolves on the profession and the press to enlighten the masses, the laity, believing that they will be ready to take that counsel and heed the advice.

Dr. Lucien Howe, Buffalo: I do not know of any brief statement more conclusive than the family histories of the pupils at the School for the Blind at Batavia, N. Y., as given by Dr. Lewis. They show the desirability of some action for the prevention of hereditary blindness.

As for objections to the mendelian theory raised by Dr. Loeb, that is for geneticists to decide. The fact is, however, that opportunities do occur for the breeding among human beings of eye conditions. For example, when one of a Northern race, from Ireland or Scandinavia, marries an Italian, we can observe the eye colors of the hybrids, and if first cousins of such crossings marry, the results can be followed in the second generation. In a similar manner opportunities are afforded occasionally for tracing serious eye defects. As fas as we know, these abnormal conditions follow the same mendelian law as do other conditions which we call normal.

Through the kindness of Professor Morgan and Dr. Bridges of Columbia University, I have been furnished with stock colonies of an insect now a classic subject for experiment. The specimens with deformed eyes and the eyeless variety I have bred through a considerable number of generations. Live specimens are presented in bottles for examination.

Finally, I ought to say that I did not make personally the bibliography or the new charts from the old family histories. The work was simply supervised in my office, by my wife and my secretary, and by the secretary of the editor of the bibliography in the *American Journal of Ophthalmology.*

Follow-Up Medical Inspection.—There is a strange lack of logic in the way we take care of our industrial children as compared with our schoolchildren. Medical inspection of schoolchildren has attained a place of considerable prominence in our child welfare problems, and we have almost come to regard as beyond the pale the school district so benighted that it pays no attention to the health of its schoolchildren. . . . All sorts of safeguards have been thrown around employed children in the shape of age limits below which they may not be employed, regulation of hours, elimination from obviously dangerous occupations, such as mining—all of which undoubtedly have their part in preventing injury to the health of undeveloped children. But the physical safeguards considered indispensable up to the moment the child begins work are not heard of after the doors of industry are closed behind him.—Florence I. Taylor, *Child Labor Bulletin,* February, 1918.

Clinical Notes, Suggestions, and New Instruments

CULTIVATION OF THE MENINGOCOCCUS UNDER PARTIAL OXYGEN TENSION

A POSSIBLE EXPLANATION OF THE POOR SUCCESS OF THE USUAL CULTURAL METHODS*

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A method by which meningococcus cultures may be easily obtained in sufficient quantity for rapid agglutination has long been sought. Almost every bacteriologist has some special medium on which he relies. In many camps, primary isolation is attempted on some solid medium, such as rabbit's blood agar or sheep serum agar; in others, various liquid mediums are used.

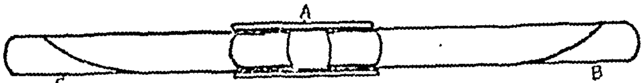

Fig. 1.—Apparatus for incubating under partial oxygen tension: *A,* rubber tube; *B,* tube with B. subtilis culture; *C,* tube with spinal fluid culture.

At this hospital it had been customary to make primary isolations from spinal fluid on solid mediums. When large amounts of fluid containing many organisms were planted, this method usually yielded a few colonies which had to be nursed along through several subcultures before rich growth was obtained. Only too often the culture was lost. Finally an enriched broth was used. A mass culture was made by pouring from 8 to 10 c.c. of spinal fluid into 100 c.c. of human serum glucose infusion broth. Usually within twenty-four hours a good growth was obtained; but when transplants were made from this broth to solid mediums, growth was meager or entirely absent. Frequent transplants had to be made to insure good growth, and many cultures were lost.[1]

It occurred to me that the explanation of this phenomenon was to be found in the fact, to which attention had previously been called,[2] that the meningococcus is a micro-aerophil, and

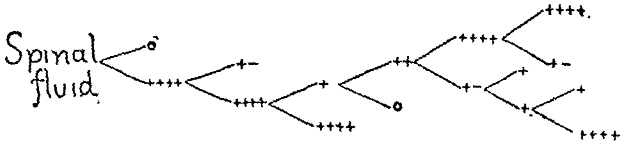

Fig. 2.—Adaptation of the meningococcus to changes in oxygen tension: Upstrokes, aerobic cultures; downstrokes, partial tension cultures; +—, doubtful growth; ++++, very rich growth.

that only a few individuals are sufficiently facultative to grow under aerobic conditions. To test this idea, the following method was adopted:

Each specimen of spinal fluid was divided into two parts. One portion was poured into a bottle of glucose infusion broth; the other was centrifuged, and a loopful of the sediment was planted on each of two slants of human serum glucose infusion agar. One slant was incubated aerobically; the other was placed under partial oxygen tension by connecting the slant to a freshly inoculated agar slant of *B. subtilis* by means of rubber tubing (Fig. 1).

Confluent growth over the whole surface of the slant was usually obtained in the partial tension cultures, while only one or two scattered colonies could be found on the aerobic slant if there was any growth at all. The broth cultures grew well; most of the growth was found near the bottom of the 100 c.c. bottle that was used. Aerobic and partial tension transplants were made from each broth culture; partial tension growth was always rich, aerobic growth was always scant.

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* From the laboratory of the base hospital, Camp Lee, Va.

[1] Asnis, E. J.: Personal communication to the author.

[2] Cohen, M. B., and Markle, Louis: A Method Which Greatly Facilitates the Culture of the Meningococcus, The Journal A. M. A., Oct. 28, 1916, p. 1302.

Figure 2 shows in graphic form the approximate adaptation of the meningococcus to changes in oxygen tension. Doubtful growth is indicated by + —; very rich growth by + + + +. The upstrokes indicate aerobic cultures, the downstrokes partial tension cultures. This chart makes these three points very clear:

1. Much better growth in primary cultures is obtained under partial tension conditions.
2. It is quite difficult to get aerobic strains from partial tension ones.
3. Aerobic strains when split off from partial tension ones have a tendency to remain aerobic, and do not grow at all well in lower pressures of oxygen.

For the isolation of meningococci from mixed cultures or from the nasopharynx, a very simple method of partial tension plating has been used.[3] It consists briefly of two notched Petri dishes inverted over a glass tube on a glass plate and sealed to the plate with wax (Fig. 3). In one Petri dish is placed the material to be cultivated; in the other, a freshly made culture of *B. subtilis*. As this method is impracticable for meningococcus carrier work on a large scale, it is hoped that in the near future the optimum reduction in oxygen tension necessary for meningococcus culture will be measured and that simple and practical methods for such culture will be worked out.

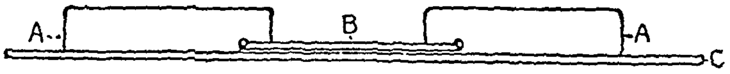

Fig. 3.—Apparatus for partial tension plating: *A, A*, inverted Petri dishes; *B*, glass tube; *C*, glass plate.

CONCLUSIONS

1. The meningococcus is a micro-aerophil, and partial oxygen tension methods of culture should be adopted for its isolation.

2. Relatively few meningococci are capable of aerobic growth. The growth ordinarily obtained by aerobic methods of culture consists of those organisms, which constitute the small minority of meningococci, that are capable of adaptation to full oxygen tension. This explains the statements made by many authorities, and found in many standard works on bacteriology, that large amounts of exudate must be planted to get suitable primary growth.

THE BLOOD PRESSURE IN GOUT

Jacob Rosenbloom, M.D., Ph.D., Pittsburgh

The literature contains few data on the blood pressure in gout. It is reasonably well established that certain of the purin bases are hypersensitive in action. Desgrez and Dorléans[1] have shown experimentally that the injection of xanthin and of uric acid causes an increase of blood pressure. It is generally understood that in gout a high pressure is the rule with increasing hypertension during the acute attacks (pain), and in the later stages hypotension develops associated with cachexia, acidosis and cardiac weakness. The hypertension is supposed to be of some value in distinguishing between lesions of the joints, the skin and the eye, as to whether they are tuberculous or gouty in origin, on account of the fact that in tuberculosis the blood pressure is usually low.

In the past ten years I have carried out frequent blood pressure readings on four patients with classical gout, all subject to acute attacks of gout, and the results are of some interest.

The accompanying table presents the data obtained in this study.

BLOOD PRESSURE OBSERVATIONS ON FOUR PATIENTS WITH GOUT

Case No.	Year	Month	Age	Systolic Pressure	Diastolic Pressure	Clinical Findings
1	1908	2	42	130	100	No acute symptoms
	1909	3	43	140	100	No acute symptoms
	1910	1	44	190	100	Acute attacks
	1910	8	44	130	100	No acute symptoms
	1911	2	45	135	90	No acute symptoms
	1911	12	45	135	100	No acute symptoms
	1912	2	46	135	100	No acute symptoms
	1913	1	47	200	100	Acute attack
	1914	1	48	140	100	No acute symptoms
	1915	2	49	140	100	No acute symptoms
	1915	11	49	195	100	Acute attack
	1916	3	50	135	90	No acute symptoms
	1916	10	50	140	90	No acute symptoms
	1917	2	51	210	110	Acute attack
	1917	8	51	130	100	No acute symptoms
2	1910	1	44	120	90	No acute symptoms
	1910	8	44	195	100	Acute attack
	1911	2	45	130	90	No acute symptoms
	1911	10	45	120	90	No acute symptoms
	1912	3	46	120	80	No acute symptoms
	1913	4	47	215	100	Acute attack
	1914	2	48	130	90	No acute symptoms
	1915	1	49	120	85	No acute symptoms
	1915	10	49	120	80	No acute symptoms
	1916	2	50	210	100	Acute attack
	1917	1	51	130	90	No acute symptoms
	1917	11	51	220	110	Acute attack
	1918	2	52	120	80	No acute symptoms
3	1913	2	58	230	110	Acute attack
	1914	1	59	120	90	No acute symptoms
	1915	2	60	220	110	Acute attack
	1916	4	61	110	80	No acute symptoms
	1916	12	61	115	80	No acute symptoms
	1917	3	62	220	110	Acute attack
	1917	12	62	110	80	No acute symptoms
4	1913	2	60	240	120	Acute attack
	1914	1	61	110	80	No acute symptoms
	1915	1	62	110	70	No acute symptoms
	1916	2	63	230	110	Acute attack
	1917	1	64	240	120	Acute attack
	1917	10	64	110	80	No acute symptoms

A study of this table shows clearly that hypertension was not present in the cases of gout studied, except during the presence of an acute attack of gout. Between attacks the blood pressure tended to be lower rather than higher than the normal.

Jenkins Arcade.

FURTHER STUDIES ON THE PRESERVATION OF COMPLEMENT BY SODIUM ACETATE

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Captain, M. R. C., U. S. Army
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Sufficient time has now elapsed to convince all serologists, who have investigated the preservative properties of sodium acetate on guinea-pig complement,[1] of its value. Since Army service has interrupted my studies, I desire to submit my present data in order that investigators who have the facilities may, if so inclined, work out the interesting problems indicated. It is hardly necessary to state that any step which makes for stability and simplification of laboratory technic, no matter how simple, may, in its application, be of tremendous value. One of the greatest complications to the Wassermann technic was the unstability of complement, and it occurred to me that if anything could be found to stabilize this very essential component it would be of considerable value. I therefore set about systematically to test the chemicals at hand in my laboratory for their respective effect on blood, with particular reference to complement, and their effect on the Wassermann reaction.

Three agents were found which did not interfere with the Wassermann reaction, which had no hemolytic properties, which did not prevent hemolysis and, therefore, did not destroy complement. They were: (1) sodium acetate, C. P. (in any strength); (2) camphor crystals, and (3) 0.5 per cent. phenol (carbolic acid).

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[3] Cohen, M. B.: A Simple and Reliable Method of Making Partial Tension Plates, The Journal A. M. A., Jan. 12, 1918, p. 84.

[1] Desgrez and Dorléans: Compt. rend Acad. d. sc., 1913, **156**, 93.

[1] Rhamy, B. W.: Preservation of Complement: A Preliminary Report, The Journal A. M. A., Sept. 22, 1917, p. 793.

The solutions of sodium acetate and of 0.5 per cent. phenol were made up in physiologic sodium chlorid solution (0.85 per cent.) in distilled water. I have not as yet determined whether 0.5 per cent. phenol or camphor crystals will preserve complement or, if so, whether either would act better than sodium acetate. It has been shown that a minute crystal of camphor will, by inhibiting germ growth, preserve amboceptor and stabilize its unit of strength. In passing I desire to recommend the formaldehyd method for preserving red cells.[2]

Ordinarily red cells kept in physiologic sodium chlorid solution in the refrigerator will begin to hemolyze in about forty-eight hours. When the formaldehyd solution (1.25 c.c. solution of formaldehyd in 1,000 c.c. physiologic sodium chlorid solution) is used, hemolysis begins in about a week. The formaldehyd must be washed out before use, as it is anticomplementary. My procedure is to take the human cells left on separating patient's serum, cover them without washing with about five volumes of the formaldehyd solution, and keep in an ice box. They are washed when needed.

For the preservation of complement I have found that sodium acetate is ideal. It has the following properties:

(*a*) It has no hemolytic action.

(*b*) It is not anticomplementary.

(*c*) The solution can be sterilized.

(*d*) Dissolved in physiologic sodium chlorid solution, it has the same hydrogen ion concentration as blood P_H 7.4.

(*e*) It preserves and stabilizes complement from two to three months in the ice box, or two weeks at room temperature.

(*f*) It can be used in any strength from 5 to 50 per cent. or in crystal form.

(*g*) Its preservative properties are not antibacterial, and therefore must be physicochemical.

(*h*) Added to whole blood in certain strengths, it prevents coagulation.

(*i*) It will preserve human complement.[3]

In preparing complement, it is best to sever the neck arteries of the guinea-pig and obtain all the blood. As soon as the clot is well formed, it is broken up gently and centrifugalized. The serum is pipetted off and a 40 per cent. dilution of all the serum immediately made with 12 per cent. sodium acetate solution, thus preserving the full complementary strength. Placed in the ice box, it will keep until the whole amount is used up. In this dilution the final concentration of acetate is two thirds of 12, or 8 per cent.

From 10 to 12 per cent. stock solutions of sodium acetate work best for the following reasons: Sodium acetate has weak bactericidal power, so that a 50 per cent. solution keeps the serum clearer than does a 5 per cent. solution. If the serum diluted with a 5 per cent. sodium acetate solution is contaminated, it spoils rapidly, losing its complementary activity in four weeks or less in the ice box. On the other hand, although the 50 per cent. acetate solution prevents germ growth except mold, there comes a time, usually in about three weeks, when this complement solution suddenly becomes inert. (Fifty per cent. or saturated sodium acetate solution added to serum to make a 40 per cent. dilution causes a slight crystalline precipitate, the supernatant fluid containing the complement.) Using from 10 to 12 per cent. sodium acetate solution as the diluent and making a 40 per cent. dilution of the guinea-pig serum is the ideal. Such a complement solution prepared sterilely has retained its complementary activity as long as three months in the refrigerator and for two weeks at room temperature in a sunlit window in August. The loss in unit strength is gradual, about 0.02 per week. For example, a 40 per cent. acetate complement dilution, the Wassermann unit of which would be 0.1 c.c., would probably be 0.125 the second week and 0.15 the third or fourth week.

On account of the variability in hemolytic resistance of red cells,[4] it is necessary to retitrate this complement dilution each time a new batch of cells is used. If used in this manner, sodium acetate has no deleterious effect on the Wassermann reaction. Indeed, if anything, the reactions are clearer cut with its use. In the 12 per cent. acetate complement dilution, germ growth occurs when contaminated; but my experience has been that this does not affect the complementary activity. I have many times used such a complement cloudy with bacterial growth but with comparatively strong complement unit. Further the addition of 10 per cent. Sodium Acetate to Culture Media (Dextrose agar) did not inhibit the growth of Streptococci. It is obvious, therefore, that the action by which acetate preserves complement must be in some way a physicochemical phenomenon, that is, that complement enters into a loose combination with sodium acetate.

This opens a very interesting and fertile field for investigation as to the nature of this elusive labile substance called complement, and suggests the possibility that it is an enzyme with definite chemical composition. As to the property sodium acetate has, as I have found, of preventing coagulation and at the same time not destroying complement, it may be that it would be of more value in blood transfusion than sodium citrate, which does destroy complement. It would therefore be of value to determine its toxicity, the minimum amount necessary to prevent coagulation, and whether or not the presence of complement makes blood more suitable for transfusion.

CHRONICALLY ENLARGED SPLEEN (MALARIAL?)

J. C. VanNuys, M.D., Lufkin, Texas, and M. B. Stokes, M.D.,
Houston, Texas

Mrs. B. T., aged 34, was one of fourteen children, ten of whom, five boys and five girls, lived to be grown. Three sisters and four brothers are now living. The father died of dysentery at the age of 68. The mother is still living, aged 68.

At the age of 10 years the patient had had a prolonged attack of fever, during which the spleen had become enlarged and dislocated downward. During this attack of fever, she had had severe constipation. Since the attack she has had many similar ones, each being accompanied by an enlargement of the spleen. Each time, after the subsidence of the temperature, the splenic enlargement decreased, but the tumor could always be felt in the hypochondrium. Ever since her first attack of fever, she has been obstinately constipated.

She was married at the age of 21, and is the mother of six children, three boys and three girls, all healthy and robust. Her husband has been dead a year. She has been in bad health her entire married life, being always worse, if not practically helpless, during her periods of gestation. During each pregnancy, she suffered severely with nausea, and pain in the left side of the abdomen.

Dr. VanNuys was called to see her, Nov. 5, 1911. The patient had been seized the night before with severe cramp-like pain in the abdomen, and diarrhea. From this time until December 7, the date of the operation, she had many attacks of severe pain in the abdomen, which were cramp-like in character, each attack leaving the abdomen increasingly tender. Her temperature ranged from 99.2 to 100.2 F. She persistently refused the advice of her physician, that an exploratory operation be performed.

During a lull between attacks, a bimanual examination was made by Drs. VanNuys and Bledsoe. This examination revealed the facts that all the pelvic landmarks were obliterated, and that the uterus was firmly fixed.

About December 1, she finally consented to an operation and was brought to Houston. On her entrance into the hospital her condition was very poor. After she had had a few days of rest, we felt justified in proceeding with the operation.

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[2] Jour. Lab. and Clin. Med., 1917. (Reimamann, Vol. 2, p. 200.) (The preservation of erythrocytes for the Wassermann reaction.)

[3] Noguchi, Hideyo: A Method of Facilitating the Serum Diagnosis of Syphilis Under War Conditions, The Journal A. M. A., April 27, 1918, p. 1252.

[4] Rhamy, B. W.: Variations in Resistance of Blood Cells to Lysis, The Journal A. M. A., Nov. 17, 1917, p. 1728.

When the abdomen was opened a large reddish purple tumor mass was revealed, plastered over by many adhesions involving the omentum, intestine and pelvic organs. After the tumor mass had been freed from the surrounding viscera, something of its character and origin was determined. It had the appearance and physical characteristics of a cyst. A large trocar was thrust into the tumor, but the capsule was so friable that it split in many directions, allowing a thick reddish purple fluid to pour out. Further dissection revealed the fact that the tumor mass was the remains of a large spleen, the pedicle of which had become twisted, shutting off the circulation and resulting in moist gangrene of the organ.

The pedicle was ligated, as much of the tumor was removed as was possible, cigaret drainage was instituted, and the abdomen was closed. The patient's general condition was very bad when she left the table.

Microscopic examination of some of the less necrotic pieces of the tumor was made by Dr. Martha Wood, corroborating the operative diagnosis.

After three stormy days, the patient began to rally, and was able to leave the hospital and to return to her home for Christmas, although the wound continued to drain freely until January 30, since which time she has been perfectly well.

COMMENT

The location of the patient's home in a district of Texas, notorious at the time of her girlhood for the prevalence of malaria, in addition to the diagnosis of malaria given to the patient by the family physician who saw her during her first attack, leads us to the assumption that the primary enlargement of the spleen was malarial in origin.

An Error of the Wassermann Test.—A test that I have used has proved many negative results to be positive. I perform the Wassermann test exactly the same as the original test, using the four hour ice-box incubation. There is an adjustment in the use of the amboceptor. Some technicians employ twice the smallest degree of amboceptor used in the titration that produces hemolysis. Others employ as high as three and four times the smallest degree of amboceptor as a unit. Using a larger amount than the titration allows gives more negative results, some of which prove to be positive. I wish to emphasize the fact of using the smallest degree of amboceptor as a unit, along with twice the smallest degree as a unit. Cases that are negative with twice the smallest degree as a unit and are + + + + with the smallest degree as a unit should be recorded as + + + +, provided, of course, the test control and the known serum show complete hemolysis. Accordingly, any cases that show + +, + + + or + + + + are to be recorded as such. Doubtful reactions are to be excluded. My results have been very satisfactory. I have found many + + + + reactions that were reported to me as negative by reliable laboratories, and my results have proved to be correct. Once more I urge that the smallest degree of amboceptor as a unit be used with twice the smallest degree as a unit. Many well known technicians have stated that the reactions with the smallest degree of amboceptor as a unit have proved not to be "snappy." However, sometimes reactions occur that are too "snappy," which might prove to be positive if the smallest degree of amboceptor as a unit was used also. Many errors in diagnosis are made because of a false Wassermann report.—Emanuel Jacobson, Brooklyn.

Health Insurance.—Today, for example, we possess a mighty power to fight disease. To the wealthy class this scientific knowledge is available; to the poverty-stricken it is doled out in charity dispensaries. But for the masses of the working population—in the United States alone among the great industrial nations—such treatment is not available. Through a properly organized system of health insurance it would be possible to bring the world of medical science to the aid of the humblest wage earner.—John B. Andrews, *The Survey.*

Military Medicine and Surgery

THE EYES OF THE ARMY*

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When an ophthalmologist studies the new regulations for drafted and enlisted men he is immediately confronted with the fact that men with low vision, which can be raised by glasses to the required standard in one eye, are enrolled for some form of limited military service, and at once the thought comes, How are these men to be supplied with glasses if they have none, and how are lost or broken glasses to be replaced here, and overseas?

The problems are more easily solved for this country than for abroad; but to obtain the best solution, the work here and there must be coordinated. In the early days following our country's entrance into the arena of world conflict, the Subcommittee on Ophthalmology of the General Medical Board of the Council of National Defense took up these problems, which then, owing to a higher standard of visual requirements, were less difficult than at present, and a plan was worked out for adopting a standard type of frame for all soldiers, and for the establishing of a small optical shop to be connected with a special hospital for surgery of the head to be sent overseas.

Various types of frames were experimented with and the following specifications finally adopted:

> White metal, best stiff construction; 40 mm. round eye; special 0.055 inch full length cable temple 6½ inches; split joint end piece; 0.072 eye wire.
>
> Bridges assorted as follows: 8/12 of N1 ½ long shank; 3/12 of N1 long shank; 1/12 of N1 ½ regular.

When the members of the subcommittee were commissioned in the Medical Reserve Corps, these plans were enlarged and modified to fit new conditions, and carried into effect by the ophthalmic department of the Division of Surgery of the Head in the Surgeon-General's Office.

Some of the ophthalmologists in this country have criticized the standard frames adopted, and with justice, for it would be impossible to select any type of frame that could not be criticized. The frame adopted, however, with its three variations of bridge, seemed to those studying this phase of the problem to present the fewest faults. The criticism was several times presented by ophthalmologists that the three types of bridge did not allow for enough variations; but before adopting such, a set of these frames was given to several first-class adjusting opticians, who quickly demonstrated that any fit likely to be called for could be obtained from one of the three bridges. It is true that the bridges are stiff, but this disadvantage is more than balanced by the fact that, once properly adjusted by the skilled mechanic, they are likely to remain in place. The criticism, however, most frequently sent in pertains to the round eye piece, and the disadvantage that the cylindric lenses may be turned in the frames. This complaint is best answered by calling attention to the fact that all cylindric lenses when in place will be marked in the side at a point close to the middle of the temple attachment, and this pointed out to the soldier so that he can watch for any possible shifting. If experience proves that the rim cannot be tightened sufficiently to prevent the slipping round of the lens, then it is a simple matter for the optician to put a tiny bit of solder on the inner groove of the eye piece, and notch the lens at the proper point to fit this little projection. The critics have advocated an oval lens; but to see the tremendous disadvantage of this, one has but to consider the millions of extra cylinders and spherocylinders cut and edged that the optical units sent abroad would have to carry to meet all the degrees of axes called for, if frames with oval eye pieces had been adopted.

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* Read before the Section on Ophthalmology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

TABLE 1.—BENCH OUTFIT FOR EACH OF THE MOBILE UNITS

Solder slate
Blow pipe
Silver solder
Soft solder
Borax
Assorted files
Screw drivers
Assorted pliers
Hand drill
Assorted screws
Balsam
Alcohol lamp
Emery cloth
Chamois strips
Assorted dowels
Lens measure
Hammer
Anvil
Neutralizing set
Marking ink
Marking pencil
Pens and holders
Protractor
Screw taps
Millimeter gage
Ajax wrench
Millimeter rules
Lens washers
Soft solder acid
Camels hair brushes
Reamers
Spring punch
Temple washers
Solder burrs
Hand burr machine
Solder tweezers
Drills Nos. 59 and 67
Guard rivets
Zylonnite blades
Temple tubing
Cork nose rests
Oil stove

3 gross service frames (1 gross each of 3 bridges)

TABLE 2.—LENSES, EDGED TO FIT SERVICE FRAMES

3 dozen pairs	+ .25 sph.
3 dozen pairs	+ .50 sph.
3 dozen pairs	+ .75 sph.
3 dozen pairs	+1.00 sph.
3 dozen pairs	+1.25 sph.
3 dozen pairs	+1.50 sph.
3 dozen pairs	+1.75 sph.
3 dozen pairs	+2.00 sph.
3 dozen pairs	+2.25 sph.
3 dozen pairs	+2.50 sph.
1 dozen pairs	+2.75 sph.
1 dozen pairs	+3.00 sph.
1 dozen pairs	+3.25 sph.
1 dozen pairs	+3.50 sph.
½ dozen pairs	+4.00 sph.
½ dozen pairs	+4.50 sph.
½ dozen pairs	+5.00 sph.
3 dozen pairs	— .25 sph.
3 dozen pairs	— .50 sph.
3 dozen pairs	— .75 sph.
3 dozen pairs	—1.00 sph.
3 dozen pairs	—1.25 sph.
3 dozen pairs	—1.50 sph.
3 dozen pairs	—1.75 sph.
3 dozen pairs	—2.00 sph.
3 dozen pairs	—2.25 sph.
3 dozen pairs	—2.50 sph.
1 dozen pairs	—2.75 sph.
1 dozen pairs	—3.25 sph.
1 dozen pairs	—3.50 sph.
½ dozen pairs	—4.00 sph.
½ dozen pairs	—4.50 sph.
½ dozen pairs	—5.00 sph.
1 dozen pairs	+ .25 cyl.
1 dozen pairs	+ .50 cyl.
1 dozen pairs	+ .75 cyl.
1 dozen pairs	+1.00 cyl.
½ dozen pairs	+1.25 cyl.
½ dozen pairs	+1.50 cyl.
½ dozen pairs	+1.75 cyl.
½ dozen pairs	+2.00 cyl.
1 dozen pairs	— .25 cyl.
1 dozen pairs	— .50 cyl.
1 dozen pairs	— .75 cyl.
1 dozen pairs	—1.00 cyl.
½ dozen pairs	—1.25 cyl.
½ dozen pairs	—1.50 cyl.
½ dozen pairs	—1.75 cyl.
½ dozen pairs	—2.00 cyl.

It has been decided by the Surgeon-General's Office to supply all soldiers and noncommissioned officers in this country and abroad with the glasses required. For the men in the cantonments, arrangements have been made whereby the prescription of the ophthalmic medical officers can be filled through the post exchanges and the Medical Supply Depot.

Steps were taken to have a first-class optician assigned to the special building in the various cantonments and base hospitals to assist in the adjustment of frames supplied to the soldiers through the exchanges. Many first-class opticians have been drafted or taken into the service, so that it was not difficult for the division surgeon in the various cantonments to find a qualified optician for this position.

Early in February, I received a cablegram, which had been sent by General Pershing, calling for optical units for overseas service to consist of a central optical shop, with surface grinding machines, and eight auxiliary units to establish optical centers in various locations in France. Capt. F. H. Edmonds, the Washington optician, was secured for the position of commanding officer of the units, and thirty-five other first-class mechanical opticians were secured, mostly by induction into the service of registrants from different parts of the country, who were highly recommended as skilled grinders, edgers, mounters and adjusters.

TABLE 3.—SPHEROCYLINDERS, ONE-HALF DOZEN PAIRS EACH

+ .25+ .25	+ .25+ .50	+ .25+ .75
+ .50+ .25	+ .50+ .50	+ .50+ .75
+ .75+ .25	+ .75+ .50	+ .75+ .75
+1.00+ .25	+1.00+ .50	+1.00+ .75
+1.25+ .25	+1.25+ .50	+1.25+ .75
+1.50+ .25	+1.50+ .50	+1.50+ .75
+1.75+ .25	+1.75+ .50	+1.75+ .75
+2.00+ .25	+2.00+ .50	+2.00+ .75
+ .25+1.00	+ .25+1.25	+ .25+1.50
+ .50+1.00	+ .50+1.25	+ .50+1.50
+ .75+1.00	+ .75+1.25	+ .75+1.50
+1.00+1.00	+1.00+1.25	+1.00+1.50
+1.25+1.00	+1.25+1.25	+1.25+1.50
+1.50+1.00	+1.50+1.25	+1.50+1.50
+1.75+1.00	+1.75+1.25	+1.75+1.50
+2.00+1.00	+2.00+1.25	+2.00+1.50
— .25— .25	— .25— .50	— .25— .75
— .50— .25	— .50— .50	— .50— .75
— .75— .25	— .75— .50	— .75— .75
—1.00— .25	—1.00— .50	—1.00— .75
—1.25— .25	—1.25— .50	—1.25— .75
—1.50— .25	—1.50— .50	—1.50— .75
—1.75— .25	—1.75— .50	—1.75— .75
—2.00— .25	—2.00— .50	—2.00— .75
— .25—1.00	— .25—1.25	— .25—1.50
— .50—1.00	— .50—1.25	— .50—1.50
— .75—1.00	— .75—1.25	— .75—1.50
—1.00—1.00	—1.00—1.25	—1.00—1.50
—1.25—1.00	—1.25—1.25	—1.25—1.50
—1.50—1.00	—1.50—1.25	—1.50—1.50
—1.75—1.00	—1.75—1.25	—1.75—1.50
—2.00—1.00	—2.00—1.25	—2.00—1.50

Each one of the auxiliary units was provided with a full equipment of cut and edged lenses, and supplied with frames and a kit of all tools necessary for the work of putting proper glasses into the frames, adjusting the latter, and repairing any frames that might be broken or otherwise injured. It was found that all of these supplies for each auxiliary unit could be packed in three of the regulation service suit cases, thus simplifying the transportation problem. A list of supplies issued a single unit is given in the accompanying tables. Lenses of strengths not included can be obtained on order from the central shop.

For the central optical unit, a full equipment of machinery for the surfacing and edging of lenses, together with a plentiful supply of glass and blanks, was provided. Electric motors, with all necessary belting and shafting, were, of course, included, the plan being to establish in some central location a manufacturing plant that could turn out from 150 to 200 pairs of lenses a day, and also take care of all repair work that would be likely to come in. All of the cut and edged lenses furnished for the auxiliary units, together with the equipment and machinery, were furnished by the American Optical Company of Southbridge, Mass., on record time, though this required their working nights, days and Sundays on the basis of eight hour shifts.

With this equipment and the skilled groups of men sent over, it should be possible to take care of the optical work in France with a high degree of efficiency. This is all made necessary by the fact that it is impossible to get this work done in the French shops. It is the expectation of the Surgeon-General's Office that future contingencies, as they arise along this line, can be properly cared for by enlargement of the present optical units.

OPTIC ATROPHY AND MULTIPLE PERIPHERAL NEURITIS

DEVELOPED IN THE MANUFACTURE OF EXPLOSIVES (BINITROTOLUENE)

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The great increase in the last three years in the demand for powerful explosives has not only enormously increased the number of employes in munition plants but also has doubtless added many workers who from lack of skill or from carelessness have rendered themselves more susceptible to the poisonous substances handled than would be the case with older and more experienced workers. At any rate, a large number of instances of industrial poisoning has appeared recently in such plants and a considerable literature bearing on the subject has appeared in Europe, and to a less extent in this country. Especially to be noted is the excellent article of Dr. Alice Hamilton.[1] Most of this literature is of English origin. Some contributions have appeared from German sources, particularly in reference to tetrachlorethane or dope poisoning, and in reference to benzene poisoning; but most of it is not available to use at this time. As no case of optic atrophy or of definite multiple peripheral neuritis has been reported, so far as the literature to which we have access shows, the following case may be of interest.

REPORT OF CASE

History.—J. B., man, aged 39, married, foreman in munitions factory, seen April 15, 1917, had one brother, five sisters and three children living and well. None were dead. The patient's father died at 63 of an accident. The mother died at 82 of old age. His general health had been good and he could recall no serious illness or injury. He had used very little tobacco and practically no liquor. There was no evidence of venereal disease, either by direct or indirect questioning. He had married at 35. He had worked in a munitions factory for two years, and before that as a fireman. In the factory his work had been with trivalene, a plant name for binitrotoluene.

Present Illness.—About one year before, one year after entering the plant, he first noticed numbness and prickling in the feet; in the course of five months this gradually spread to the knees. He had no pain, but described the sensation as "like an electric tickling." At the end of the five months he was placed on outside work, and in the course of one month the numbness gradually grew less, but did not wholly disappear from the feet. After one month of other labor, he returned to his work in the trivalene plant as foreman, and in this position did not come quite so closely into contact with the trivalene as before. For five months there was no special change in his condition, but he still had the numbness in the feet. At the end of five months he returned to his former work of direct handling of the trivalene in the "sweat house." In one week the numbness had increased in the feet and legs. Directly after, early in December, his sight began to fail, objects appeared blurred, and he could not see well to read. His vision was then 20/40 in the right eye and 20/70 in the left eye. He was slightly cyanotic and appeared anemic. Shortly after, he noticed a little numbness in the tips of the fingers, and this had continued ever since but had not changed much. During the month of March his eyesight failed rapidly, and he quit work, April 5, 1917. At this time, vision was 20/200 in each eye. Since then his sight has failed further; April 8, vision was 6/200 in each eye. At present he can get about without difficulty, but he cannot make out even the largest print and cannot even make out the outline of a face. The left eye is a little worse than the right. There is no history of jaundice or gastritis and no loss of sexual, bladder or rectal control.

When asked to give the experiences of other men who worked with him, the patient stated that when foreman he had a crew of four men working under him; but as they habitually did not like the work or could not stand the fumes of the trivalene, they were constantly changing, and he is unable to describe the effect of the trivalene very accurately on them. One man worked for about six months handling the trivalene, and in that time developed a numbness and swelling of the feet so that he could not put on his shoes. He quit in the spring, worked on a farm all summer, and recovered, but did not return to the plant. One man has worked in the trivalene for eight months with no apparent ill effect. He takes no special precautions. Two or three other men who worked varying periods of time complained of numbness and tingling in their hands and feet and of difficulty in their gait, and headaches were frequent among the workers. All the men are provided with good leather gloves; but the trivalene, which is oily as they begin handling it and later turns to a crystalline substance, soon saturates their gloves so that they have little protection even over the hands.

Physical Examination.—The patient is a well developed and well nourished man, slightly pale; height 5 feet 6 inches, usual weight 156 pounds, and present weight 148 pounds. In a period of four days of observation his temperature ranged from 97 to 98.2, pulse 55 to 71, but usually about 60, and blood pressure 134 systolic and 81 diastolic. The tonsils were submerged and showed no special signs of inflammation; the teeth were badly worn, and there was a moderate degree of pyorrhea and gingivitis. The glands were not enlarged; the lungs were normal. Except for a moderate thickening of the blood vessels, the circulatory system was negative. Liver and splenic dulness were not altered, and the spleen was not palpable. There was no abdominal tenderness.

All the cranial nerves were normal except as noted below. With the right eye the patient counted fingers at 14 inches and with the left at 10 inches. The visual field was normal to rough tests except that there was some unusual dulling at the central point. The fundus showed a rather well developed atrophy with pale disk and some swelling of the veins and contraction of the arteries. The right pupil was somewhat larger than the left. The left reacted fairly and the right poorly to light, and both only fairly to distance.

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[1] Hamilton, Alice: Industrial Poisons Encountered in the Manufacture of Explosives, The Journal A. M. A., May 19, 1917, p. 1445.

Both had had "drops" instilled some days previously. A watch was heard in the right ear at 18 inches and in the left at twelve inches. Air conduction was better than bone in both, and the Weber test was negative. There were no subjective sounds at the time of the examination, but the patient stated that at the time he quit work he had "rumbling sounds" in both ears. Vibration sense was lost in the toes but present in the malleoli and upward. Joint sensibility was distinctly impaired in the toes. Neither sense showed any impairment in the fingers. Pain (pin prick) was usually appreciated in the fingers and in the feet and toes, but touch (cotton) was impaired in both. Tendon and muscle pain sense were normal. There was no incontinence of urine or feces, and sexual power was not impaired. Sweating was evident in the hands and feet.

The muscles were of good volume and tone, but the patient insisted that his strength was much impaired and that his legs would often give way under him. In all the tests he gave very fair responses. He complained of stiffness and of an occasional pulling up or jerking of the feet and legs, especially at night, and said that this seemed like an "electric shock." Coordination was good in the upper extremities and impaired in the lower. The patellar and abdominal reflexes were present but diminished. The Achilles, biceps, triceps, supinator, jaw, pharyngeal, palate, plantar, anal, bulbocavernosus and cremasteric reflexes were normal. There was no patellar or ankle clonus. A blood test revealed: hemoglobin, 80 per cent.; red cells, 4,900,000; white cells, 8,000: differential count: polymorphonuclears, 73.5 per cent.; small mononuclears, 19.5 per cent.; large mononuclears, 5.5 per cent.; eosinophils, 0.5 per cent.; other forms, 1 per cent. The cerebrospinal fluid was clear with no undue pressure. The Wassermann, Nonne, and gold tests and cell count were negative. The Wassermann test was also negative in the blood.

Treatment and Results.—Under treatment with laxatives and potassium iodid and sweating, the patient improved after about two months and has shown steady improvement since. In the month of February, 1918, he still complained of tingling and numbness in the toes. His vision was then 20/40 in the right eye and 20/60 in the left eye.

COMMENT

Binitrotoluene, known under the name of trivalene in the plant where this man worked, is the product of the second step in the nitration of toluene. When received as monotrinitrotoluene it is a heavy dark cherry colored oil, and in the process of the second nitration it changes to a crystalline substance looking much like brown sugar. As such it has a faint odor of bitter almonds and a bitter, acrid taste.

Like monotrinitrotoluene it is absorbed through the skin and mucous membranes and when so absorbed seems to have a marked transient and perhaps more or less permanent effect on the central nervous system.

In this plant, in addition to the patient here reported and those mentioned by him, there were two cases of pronounced mental aberration and one of somnolence. In the mental cases no delusions or hallucinations were manifested, but rather signs of mental dulness. The men were very quiet, with an aimless tendency to seclusion. One locked himself in an outhouse and was found only after one hour's search. He seemed stupid, could not understand or answer questions, and was mildly apprehensive. He would try to hide away, even in a room that offered no concealment, but still was docile and unafraid on contact with men. This condition persisted for about forty-eight hours, with later rapid improvement and complete recovery.

The other patient had, in addition, a marked cyanosis, with weak heart action, staggering gait and fainting. Recovery occurred within a few days.

The case of somnolence was most peculiar. The patient presented the picture of alcoholic intoxication in gait, speech and general appearance, with a very strong tendency to sleep. Not only was his muscular power diminished, but his coordination was poor. He could be got to his feet, but could not stand. With support he could with difficulty use his legs and feet, but not accurately. When lying down he would fall asleep while talking, even in the middle of a sentence. He said his mind was perfectly clear, but he could not keep awake. The knee jerks were slow in response, but increased in extent. The quadriceps could be seen to contract slowly as if in voluntary movement. He complained of marked diplopia, and occasional strabismus could be observed. The pupils were normal. The condition came on abruptly, was not more than twelve hours in development, and cleared away gradually after five or six days with final complete recovery.

Livingston-Learmonth and Cunningham,[2] in an article on the effects of trinitrotoluene on women workers, divide the symptoms into two classes, irritative and toxic, and the latter again into digestive, circulatory, cerebral and special. Under cerebral symptoms they say:

> Drowsiness is very common and many workers describe it as a sort of drugged feeling. Depression, lassitude and apathy are common. Transient loss of memory, slight disorders of sight (blurred vision, etc.), and a certain amount of transient peripheral neuritis have been noted in several of our cases. In severe cases delirium, coma and convulsions occur toward the end.

As terminal symptoms of trinitrotoluene poisoning, Rice[3] mentions delirium, light-headedness and flighty utterances, followed by a stage of coma lasting about twelve hours and ending in death.

Dr. Alice Hamilton[4] says:

> The symptoms that follow inhalation of benzol and toluol fumes or absorption of these are, in mild cases as in severe ones, the symptoms of intoxication by a substance with a special action on the central nervous system: Dizziness, confusion, transient excitement followed quickly by stupor, twitching, then exhaustion, loss of consciousness, with respiration at first rapid then slow, pulse rapid, temperature low.

She further adds:[5]

> Delirium, sometimes maniacal, is not rare; tetanic convulsions with marked opisthotonus and high temperature were described in one unusual case. Three cases developed meningitis before death.

In some cases of "dope" poisoning, which is said to "act on the nervous centers," nervous symptoms have been reported. Willcox[6] quotes Dr. Heffter and Dr. Kraus, who state that in Germany, where the "dope" contains more tetrachlorethane than the English varnishes, two types of symptoms develop: (1) gastro-intestinal and hepatic symptoms, and (2) nervous symptoms. The latter group of patients suffers from tremors, headaches, pains in the limbs, numbness, "pins and needles" of the extremities, loss of knee jerks and excessive sweating.

Koelsch[7] also noticed among the more marked cases of tetrachlorethane poisoning various nervous phenomena, as headache, paresthesias in the extremities, tremor of the hands, and paralysis.

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[2] Livingston-Learmonth, Agnes, and Cunningham, Barbara M.: The Effects of Trinitrotoluene on Women Workers, Lancet, London, 1916, 2, 261.

[3] Rice, A.: Munition Plant Poisoning, Am. Jour. Pub. Health, 1917, 7, 273.

[4] Hamilton, Alice: U. S. Dept. Labor, Bureau of Labor Statistics, Whole No. 219, May, 1917.

[5] Hamilton, Alice: Month. Rev. Labor Statistics, 1917, 5, No. 2.

[6] Willcox: Lancet, London, 1915, 1, 544.

[7] Koelsch: München. med. Wchnschr., Nov. 16, 1915.

Benzene (benzol, C_6H_6) and its homologues, according to Lehmann,[8] produce in man a condition resembling intoxication, dizziness, headache and gastro-intestinal disturbances; after a prolonged inhalation, motor and sensory symptoms develop.

These appear to be the only descriptions in literature available to us referring to any special effect on the nervous system; but the references here to blurred vision, transient peripheral neuritis, pains in the limbs, numbness, pins and needles, loss of knee jerks, etc., suggest clearly an involvement of the peripheral nerves and possibly also of the optic nerves.

As far as possible we have excluded other sources of poisoning in our case, and the evidence appears to us sufficiently strong to classify it under the heading given. The failure to show a loss or even marked diminution of the deep reflexes of the lower extremities we believe to be due to a possible beginning involvement of the lateral columns of the cord, suggested by the jerking of the legs and the sense of stiffness.

POSTMORTEM FINDINGS IN MEASLES-BRONCHOPNEUMONIA AND OTHER ACUTE INFECTIONS *

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During the past winter, necropsies were performed in sixty-two cases at Camp Zachary Taylor, Ky. The patients were soldiers, with one exception white, native born, physically and mentally sound, in the third decade of life, most of them country bred and from the central states. This uniformity of type permits comparative study.

The pathologic observations hereinafter described will confirm and amplify the observations reported by H. L. Alexander[1] that the infections at this camp underwent a changing history from pneumococcal, to measles, to streptococcal. It is shown that with the changes of the etiologic agent there was a distinct change in the pathologic condition of the lungs, parenchymatous organs and serous surfaces. The clinical side has been presented by Fox and Hamburger.[2]

In the fall of 1917, the etiologic agent was the pneumococcus with its customary results. Measles appeared late in October, causing the first death, November 7, from what is considered a typical measles pneumonia, with a catarrhal or purulent bronchitis. On the advent of the streptococcus infection, causing the first death, December 13, the pathologic picture changed, the bronchitis being now hemorrhagic, the pneumonia patchy and hemorrhagic, while the causative organism began to show a predilection for serous surfaces.

The principal causes of death as determined by necropsy are given in Table 1. Complicating lesions, occurring practically always, are not listed in this table as they are fully discussed later.

It is seen from this table that fifty-two of the sixty-two deaths were produced by acute infectious diseases, and that lesions of the lungs and meninges contributed, with one exception, all the primary lethal causes. It is a noteworthy fact that the intestinal tract was not involved in any of the infections, and no transmissible disease of it was responsible for death. This means that in this camp no typhoid, paratyphoid, dysentery, winter cholera or food poisoning and the like occurred. The ten deaths due to noninfectious diseases were mainly surgical affections or accidents not incurred in line of duty. These are not considered in this paper.

BRONCHOPNEUMONIA

Bronchopneumonia was the lesion most frequently found, thirty-five of the fifty-two cases presenting this change; in twenty-seven it was looked on as a primary cause of death.

To study more closely the effect of the various etiologic agents on the disease picture, all cases of bronchopneumonia are grouped into four classes:

A. Following measles; the *Streptococcus hemolyticus* isolated; 3 cases.

B. Following measles; the *Streptococcus hemolyticus* not isolated; 13 cases.

C. Not following measles; the *Streptococcus hemolyticus* isolated; 10 cases.

D. Not following measles; the *Streptococcus hemolyticus* not isolated; 9 cases.

The bronchopneumonia, then, was preceded by measles in sixteen instances, and not preceded by measles in nineteen cases. The streptococcus was isolated in thirteen cases, and not isolated in twenty-two cases. *In the latter group the pneumococcus was* frequently found. In a small number of cases, no bacteriologic studies were made.

TABLE 1.—CAUSES OF DEATH AS DETERMINED BY NECROPSY

Bronchopneumonia.............	27	Meningitis, meningococcic.......	5
Lobar pneumonia.................	8	Meningitis, streptococcic........	3
Empyema, primary...............	6	Meningitis, pneumococcic.......	1
Pericarditis, primary............	1	Meningitis, following mumps....	1
Noninfectious diseases...........	10		

The points analyzed are: the time of occurrence of bronchopneumonia after the first definite symptoms of measles appeared; the duration of the bronchopneumonia from the day it was first recognized to the day of death; the type of bronchopneumonia, and the changes in the viscera. Of the latter only the pleurae, bronchi, spleen and kidneys showed constant and important alterations. The results are collected in Table 2.

TYPES OF BRONCHOPNEUMONIA

Four anatomic types of bronchopneumonia were observed. These were found with such regularity that they were classified as Types I a, I b, II and III. The first two types were mainly found in bronchopneumonia following measles; the last two in hemolytic streptococcic infection.

Type I a. The lungs are large, expanded, and very heavy. The weight of each lung ranges from 600 to 1,100 gm., the combined weight often approaching 1,500 gm. The pleural surface may be smooth and glistening, but more often is dulled and overlaid with fibrin exudate. The general surface of the lung is mottled, dusky gray-red with a distinct bluish tint. Small, ill defined areas of elevation and depression are often seen. On palpation, innumerable small, firm areas are felt throughout all the lobes. The lungs may be said to have a "shotlike" feel. The intervening lung tissue is boggy. The cut surface is pale bloody-red; light pressure causes the outpouring of a large amount of moderately bloodstained, frothy serum. Scattered over the entire cut surface are numberless rounded, light gray-red, definitely raised firm areas, appearing very much like large, gray miliary tubercles. They usually distinctly surround a small bronchial branch, and measure from 3 to 5 mm. in diameter. About one half to one third of the entire lung tissue is taken up by these consolidations.

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[8] Lehmann: Arch. f. Hyg., 1911.

* From the Cantonment Laboratory, Base Hospital, Camp Zachary Taylor, Ky.

[1] Alexander, H. L.: Hemolytic Streptococcus Causing Severe Infections at Camp Zachary Taylor, Ky., The Journal A. M. A., March 6, 1918, p. 775.

[2] Fox, Herbert, and Hamburger, W. W.: The Streptococcus Epidemic at Camp Zachary Taylor, Ky., The Journal A. M. A., June 8, 1918, p. 1758.

The bronchial branches stand out distinctly; from many, a thick, yellow, purulent fluid exudes. The bronchial mucosa is swollen and somewhat reddened. In some instances the bronchial tubules are dilated, forming small and rather smooth-walled cylindric or globular bronchiectases. The peribronchial lymph nodes are swollen, juicy, and dark grayish red. Their cut surface is very moist and has a mottled appearance.

Type I b. This is a later stage of the preceding process. All the various anatomic changes are more accentuated. The pleura is generally covered with soft yellow exudate. The organ is markedly distended and the combined weight of the lungs approximates 2 kg. The surface of the lung lacks definite rounded contour, showing many smaller and larger elevations, blue, reddish brown or purplish in appearance fading gradually. Subpleural punctate hemorrhages are occasionally encountered. The nodules palpated are larger than in the preceding type, but are of approximately uniform size. No large consolidated patches are felt. The anterior edges of the lung and the upper lobes may be inflated. The cut surface is moderately bloody. The general color is grayish red; innumerable well outlined, slightly, but definitely raised areas of a yellowish, grayish red or dark reddish brown surround the bronchial tubes. These consolidations vary from about 5 mm. to 1 cm. in diameter. The grayish areas are quite firm, while the yellowish patches are more or less softened. The bronchi show the same general changes as in the preceding type.

The principal features of Types I a and I b are, then, marked edema, the discrete character of the consolidations, *their distinct peribronchial situation* and their occurrence in all lobes. They vary in color, size and consistency, being small, firm and light gray in the earliest stages and then becoming larger, grayish red, dark red, and finally yellow and softer in appearance and consistency. The aggregate total of these areas would equal from one third to two thirds of the entire pulmonary substance, depending on the stage. A purulent bronchitis accompanies the lesions. The marked edema and the very small size of the consolidations often obscure the clinical picture of bronchopneumonia.

Type II. The pleura usually shows inflammation; empyema is often present and the lung is slightly or not at all enlarged. On palpation, various sized areas of resistance are noted. On section, the lung tissue is not nearly so moist as in types I a and I b. The areas of consolidation are several centimeters in diameter, of irregular contour, slightly or indefinitely raised *and not visibly peribronchial*. They vary in color from dark red to grayish yellow and often show a surrounding hemorrhagic zone. Usually the lesions are confined to one or two lobes. The bronchial branches are not unduly distinct and almost always show a deep red hemorrhagic mucosa and exude a sanguineous or sanguinopurulent fluid. The peribronchial lymph nodes are large and more reddish than in Types I a and I b. This type of bronchopneumonia resembles the ordinary kind seen in the necropsy room excepting the great frequency with which empyema occurs and the hemorrhagic character of the bronchitis.

Type III. Confluent bronchopneumonia or pseudolobar lobular pneumonia. A large part of a lobe is consolidated. The cut surface is moist and finely granular; the granularity being less distinct than that of lobar pneumonia. The lobes show several distinctly different processes. While the general color is brownish red, there are areas more yellowish and others more grayish or reddish; but all fade into one another, so that the end-picture appears at first glance more homogeneous than heterogeneous. The pseudolobar pneumonia is, therefore, made up of a number of units placed so closely together that they give the appearance of a single large consolidated patch.

MEASLES-BRONCHOPNEUMONIA

Table 2 shows that nine of the sixteen cases of bronchopneumonia following measles were of Types I a or I b. The spleen was slightly enlarged, being about one and one half to twice its normal size and averging 225 gm. in weight. The capsule was smooth and transparent, the outside cover being bluish red. The organ was somewhat less firm than normal, the cut surface dull red, the trabeculae of usual size; the splenic follicles were prominent, a light yellowish gray, and about twice their normal size. The splenic pulp showed no gross changes. The splenic picture is, therefore, one usually termed "acute follicular splenitis."

In five cases not showing Type I bronchopneumonia, complications were present which may have influenced the character of the lung lesions. In two instances a streptococcic infection was superimposed. In others, epidemic meningitis, lobar pneumonia and erysipelas coexisted. As to the development of the bronchopneumonia after the onset of measles and as to its duration, no uniformity existed, as can be seen in Table 2. The kidneys, in a majority of cases, showed various grades of acute parenchymatous nephritis.

ETIOLOGY OF MEASLES-BRONCHOPNEUMONIA

One of the dominant symptoms of measles is bronchitis appearing early and often persisting. The cause of this bronchitis is not known, but it is reasonable to suppose that it is due to the virus of measles. In this connection, I would call attention to the recent work of Tunnicliff,[3] who isolated a small anaerobic coccus from the blood in forty-two out of fifty cases of measles. In the present epidemic, hemolytic streptococci appeared in the throat in a large percentage of the cases of measles, general medical cases as well as apparently normal cases. Detailed bacteriologic figures will be given in a further paper by Levy and Alexander.[4] The great invasive power and virulence of the streptococcus found in the present epidemic is demonstrated at necropsy by the extensive involvement of all the principal organs. It is most likely that they will readily thrive in an already pathologic field, that is, the inflamed bronchial tubes of measles. In the early postmortems, before the epidemic of streptococcus had appeared, a definite type of measles-bronchopneumonia was found, here termed Type I a and Type I b. The anatomic picture was essentially *the same as that seen for several years in the necropsy* room of the Philadelphia General Hospital by myself, and which has been described by several observers. From a study of the necropsies here, I am inclined to believe that a true measles-bronchopneumonia, caused by the virus of measles, exists. Since, however, a number of organisms, as pneumococci and streptococci, occur almost constantly in the throat, *secondary* invasion will take place in the bronchial system and one or another organism will be found in the bronchial branches and pulmonary lesions. If these organisms possess marked virulence and invasive powers, and if they intrude early in the disease, the anatomic picture will be determined by the invading bacteria, and the possible influence of the measles virus may be

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[3] Tunnicliff, Ruth: The Cultivation of a Micrococcus from Blood in Pre-Eruptive and Eruptive Stages of Measles, The Journal A. M. A., April 7, 1917, p. 1029.

[4] Levy, R. L., and Alexander, H. L.: The Predisposition of Streptococcus Carriers to the Complications of Measles, The Journal A. M. A., to be published.

TABLE 2.—FINDINGS IN THIRTY-FIVE CASES OF BRONCHOPNEUMONIA

No.	Days after Onset of Measles	Duration, Days	Type	Pleurae	Bronchi	Spleen	Kidney	Other Findings
A. Following measles; due to Streptococcus hemolyticus (3 cases)								
18	..	4	I b	R., empyema	Acute purulent bronchitis	Acute diffuse splenitis	Acute parenchymatous nephritis	Acute fibrinous peritonitis; acute fibrinous pericarditis
34	6	25	II	Double empyema	Acute hemorrhagic bronchitis	Acute follicular splenitis	Acute parenchymatous nephritis	
41	14	9	II	Normal	Acute hemorrhagic bronchitis	Acute hemorrhagic splenitis	Cloudy swelling	Thrombosis of left first sinus; left otitis media
B. Following measles; Streptococcus hemolyticus not isolated (13 cases)								
5	4	7	I a	Normal	Acute purulent bronchitis	Acute follicular splenitis	Acute parenchymatous nephritis	
6	6	9	I b	Acute fibrinous pleurisy	Acute purulent bronchitis	Acute diffuse splenitis	Cloudy swelling	
7	..	..	I b	Acute fibrinous pleurisy	Acute purulent bronchitis	Acute follicular splenitis	Acute parenchymatous nephritis	
11	..	4	I a	Normal	Acute purulent bronchitis	Acute follicular splenitis	Acute parenchymatous nephritis	
12	..	8	I b	R., serofibrinous pleurisy; L., acute fibrinous pleurisy	Acute purulent bronchitis	Acute follicular splenitis	Acute parenchymatous nephritis	Erysipelas
13	..	25	II	Normal	Acute catarrhal bronchitis	Acute follicular splenitis	Cloudy swelling	Acute epidemic meningitis
19	7	5	I b	L., acute fibrinous pleurisy	Acute hemorrhagic bronchitis	Acute diffuse splenitis	Acute parenchymatous nephritis	
21	11	4	III	R., acute fibrinous pleurisy	Acute purulent bronchitis	Acute diffuse splenitis	Acute parenchymatous nephritis	
25	11	5	I a	R., acute fibrinous pleurisy	Acute purulent bronchitis	Acute diffuse splenitis	Normal	
26	17	7	II	Double empyema	Acute hemorrhagic bronchitis	Acute diffuse splenitis with hemorrhage	Acute parenchymatous nephritis	
28	6	15	II	Normal	Acute catarrhal bronchitis	Acute diffuse splenitis	Cloudy swelling	Erysipelas, double otitis media
32	16	6	II	R., empyema	Acute hemorrhagic bronchitis	Acute follicular splenitis	Acute parenchymatous nephritis	Lobar pneumonia
48	7	4	I a	L., acute fibrinous pleurisy	Acute purulent bronchitis	Acute follicular splenitis	Acute parenchymatous nephritis	
C. Following measles; due to Streptococcus hemolyticus (10 cases)								
35	..	..	II	R., empyema	Acute hemorrhagic bronchitis	Acute follicular splenitis	Acute parenchymatous nephritis	Acute serofibrinous pericarditis
43	..	3	II	Normal	Acute hemorrhagic bronchitis	Acute diffuse splenitis	....	Acute purulent meningitis, thrombosis left lateral sinus, double otitis media
43	..	9	II	L., acute serofibrinous pleurisy	Acute hemorrhagic bronchitis	Acute diffuse splenitis with hemorrhage	Cloudy swelling	Acute fibrinous pericarditis
44	..	6	II	R., empyema	Acute hemorrhagic bronchitis	Acute diffuse splenitis with hemorrhage	Acute parenchymatous nephritis	Acute fibrinous pericarditis
51	..	10	II	L., empyema	Acute hemorrhagic and purulent bronchitis	Acute follicular splenitis with hemorrhage	Acute parenchymatous nephritis	
52	..	..	II	L., acute fibrinous pleuritis	Acute hemorrhagic and purulent bronchitis	Acute hemorrhagic splenitis	Acute parenchymatous nephritis	Acute otitis media; acute left mastoiditis; acute suppurative myositis and arthritis
53	..	11	II	Normal	Acute hemorrhagic and purulent bronchitis	Acute diffuse splenitis	Cloudy swelling	Acute hemorrhagic encephalitis
57	..	4	II	R., empyema	Acute hemorrhagic and purulent bronchitis	Acute follicular splenitis with hemorrhage	Cloudy swelling	Acute pleural pericarditis
58	..	23	III	R., empyema	Acute purulent bronchitis	Acute follicular splenitis	Acute parenchymatous nephritis	Acute right mastoiditis
62	..	6	I a	Double empyema	Acute hemorrhagic and purulent bronchitis	Acute diffuse splenitis	Acute parenchymatous nephritis	
D. Not following measles; streptococcus not isolated (9 cases)								
2	..	10	II	Acute fibrinous pleurisy	Acute purulent bronchitis	Acute diffuse splenitis	Acute parenchymatous nephritis	Acute purulent meningitis
4	..	4	II	Normal	Acute catarrhal bronchitis	Acute diffuse splenitis	Acute parenchymatous nephritis	Lobar pneumonia
10	..	16	II	Normal	Acute purulent bronchitis	Acute follicular splenitis	Cloudy swelling	Acute meningococcic meningitis
15	..	4	II	Normal	Acute catarrhal bronchitis	Acute follicular splenitis	Cloudy swelling	
22	..	8	II	R., empyema	Acute purulent bronchitis	Acute follicular splenitis	Acute parenchymatous nephritis	Acute pericarditis
23	..	6	II	R., empyema	Acute purulent bronchitis	Acute follicular splenitis	Cloudy swelling	Pyemia from self-inflicted wound
29	..	..	II	Double acute fibrinous pleuritis	Acute purulent bronchitis	Acute follicular splenitis	Acute parenchymatous nephritis	Acute meningococcic meningitis
45	..	12	II	Normal	Acute catarrhal bronchitis	Acute follicular splenitis	Cloudy swelling	Acute meningitis; cause undetermined
60	..	8	II	Normal	Acute catarrhal bronchitis	Acute diffuse splenitis	Acute parenchymatous nephritis	

obscured. In fact, the lesions established will be a true streptococcic or pneumococcic bronchopneumonia. If, on the other hand, the invading organisms enter the system late in the disease, are few in number, or do not possess marked virulence and invasive powers, they will influence the pathologic process slightly or not at all, and a true measles-bronchopneumonia will be produced. This explanation would readily fit our anatomic findings. I greatly regret that because of certain technical accidents, our microscopic sections have been largely unfit for study; for this reason, only the gross anatomic picture is given.

STREPTOCOCCIC BRONCHOPNEUMONIA

The majority of cases of streptococcic bronchopneumonia were of Type II. The bronchi showed hemorrhagic inflammation. Empyema occurred frequently. The spleen presented the picture of an acute splenitis often with hemorrhages, or a distinct hemorrhagic condition; it was slightly enlarged, having a smooth capsule of a slaty color or dark red. The consistency was flaccid, the cut surface pale grayish brown and often containing irregular dark red hemorrhagic areas; the follicles and trabeculae were indistinct.

Otitis media, mastoiditis, and other complications were frequently present. The mastoiditis was characterized by reddish black discolorization of the bone, which was so necrotic that it could be easily cut with a knife. Subserous hemorrhages, usually small and of pin-point size, were frequently encountered on the pleural, pericardial, renal, cerebral and hepatic surfaces. Similar hemorrhages were found in the mucosa of the renal pelvis, the stomach and the intestine. In a general way, organic changes were more widespread and of greater severity in the streptococcic infections.

BRONCHOPNEUMONIA NOT FOLLOWING MEASLES AND NOT STREPTOCOCCIC

Cases of bronchopneumonia not following measles and not streptococcic occurred usually as a complication of some other disease (Table 2). The lung picture was classified as Type II, but, as the table shows, the bronchial and visceral changes were less pronounced.

LOBAR PNEUMONIA AND COEXISTENT LOBAR AND BRONCHOPNEUMONIA

The eight cases of lobar pneumonia resemble, in every way, those usually encountered. In three, coexisting bronchopneumonia was found, in all of which the pneumococcus was isolated. One pneumonic lung presented an interesting picture. The entire right lung was consolidated; the upper and middle lobe had a grayish red cut surface, granular in appearance, from which pneumococcus cultures were made. The lower lobe possessed a distinctly more reddish appearance, and from this part hemolytic streptococci were isolated. It may be that the streptococcic and pneumococcic inflammation coëxisted, or, what is more likely, the streptococcus process was superadded to the pneumococcic involvement.

EMPYEMA

The necropsies during the past winter showed an unusually high percentage of empyema, this condition being present in 21 of 52 cases. (The term "empyema" is here used to include serofibrinous pleurisy. In the table these two stages of the same process are separated.)

Clinically, a "cold" or "sore throat" frequently preceded the empyema by a few days; then, after exertion, or without discoverable cause, the following syndrome was noted: a chill, which is described as severe and sometimes lasting for an hour followed by a cough, pain in the side, fever and dyspnea. This clinical history, with the finding of dulness in the side often lead to the diagnosis of lobar pneumonia. The roentgen ray and clinical studies showed that the empyema was of unusually rapid occurrence, often developing over night.

Table 3 shows the locations of the empyema, the condition of the lung, the organism isolated, and coexisting inflammation of the peritoneum and pericardium. It is seen that only five cases of measles were complicated by empyema; in ten instances "sore throat" or a "cold" preceded the disease. The organisms found were: hemolytic streptococcus, fourteen; pneumococcus, five; no growth, and undetermined one each. In all cases the fluid obtained at necropsy was distinctly turbid, in most cases frankly purulent. It usually was a thick, yellow and creamy liquid, in which large clumps of fibrin floated. Occasionally a greenish tint was found, and, in the streptococcic cases, a brownish, light coffee color. The quantity varied from 100 to 2,500 c.c.; this variation is in part due to previous aspiration or operation. In nine instances the right, in eight the left, in four both pleural cavities were affected. In the latter, various developmental stages could be observed; the empyema was walled off or pocketed by a tough, fibrinous adhesion between the lung and the lateral chest wall. Interlobar empyema was only once found. Sometimes only one, sometimes several pus pockets were present; a certain amount of free basal empyema usually existed. These cases were of considerable clinical interest since drainage proved difficult and occasionally a large pocket was not reached, while another was perfectly emptied. In all cases of empyema, the pleural surface was almost completely enveloped by a thick coat of yellow, soft exudate averaging from 3 to 10 mm. in thickness, and binding the lung lightly to the chest wall here and there. If the exudative process had existed for some time, organization occurred. The pleural surface then was grayish, and had a somewhat scaly, dry appearance. The exudate was much tougher and adhesion firmer; in the latter cases empyema pockets were found. This would seem to indicate that, other conditions permitting, early operations offer the best chance for complete drainage. The changes in the lung were usually those of bronchopneumonia; lobar pneumonia was found only in one case. The lung on the infected side showed compression varying in degree with the quantity of fluid present. In several instances the lung was no larger than a fist, having then a dry fleshy appearance and a tough meat feel. The cut surface was dark red, airless and dry, the bronchial branches standing out prominently because of the loss of separating tissues. More often than atelectasis of the entire lung, compression of only one lobe was found; this had the same appearance as described above. The uninvolved side showed compensatory inflation, the organ being widely distended and hypercrepitant.

In six cases no inflammatory changes were present in the lungs, and the empyema had to be looked on as primary. The lung tissue was carefully examined in these cases; and while it is conceivable that the existing atelectasis obscures the inflammatory changes, careful study failed to reveal any. Five of these primary empyemas were streptococcic in origin. In the other, no organism was isolated.

ACUTE PERICARDITIS

Ten instances of acute pericarditis were discovered, with one exception, in the serofibrinous or purulent stage. One case was preceded by measles, another by "rheumatism." The hemolytic streptococcus was isolated six, the pneumococcus four times (twice Type II, once Type I, once, type not determined). Lobar pneumonia existed in one of the cases, bronchopneumonia in six, and in three instances the lung did not show any inflammatory processes. In all but one patient the pericardial inflammation was associated with empyema. In one case the pericarditis was looked on as primary, since no inflammatory processes in other organs were found present. In this case hydrothorax and ascites of undetermined origin were found. The findings are grouped together in Table 4.

TABLE 3.—FINDINGS IN EMPYEMA AND SEROFIBRINOUS PLEURITIS

No.	Preceding Disease	Pleurae	Lung	Organism Isolated	Remarks
12	Measles	R., serofibrinous pleurisy L., fibrinous pleurisy	R., bronchopneumonia L., bronchopneumonia	Pneumococcus	
16	"Cold"	R., empyema L., normal	R., compress-atelectasis L., compensatory inflation	Streptococcus hemolyticus	No inflammatory changes in lungs; moderate purulent bronchitis
18	Measles	R., normal L., empyema	R., bronchopneumonia some compress.-atelectasis L., bronchopneumonia	Streptococcus hemolyticus	Acute pericarditis; acute peritonitis
22	"Cold"	R., empyema L., normal	R., compress-atelectasis L., bronchopneumonia	Pneumococcus	L., few bronchopneumonic areas; R., show none, but marked purulent bronchitis
23	....	R., normal L., empyema	R., bronchopneumonia L., compress-atelectasis	Pneumococcus	Acute pericarditis
26	Measles	R., serofibrinous pleurisy L., empyema	R., bronchopneumonia L., compress-atelectasis		
27	....	R., normal L., empyema	R., normal L., infarct, upper lobe; compress-atelectasis	Streptococcus hemolyticus	No inflammatory changes in lungs; hemorrhagic bronchitis and tracheitis
29	....	R., normal L., serofibrinous pleurisy	R., compensatory inflation L., compress-atelectasis	....	No inflammatory changes in lungs; hemorrhagic bronchitis and tracheitis
32	Measles	R., empyema L., normal	R., bronchopneumonia L., bronchopneumonia	Pneumococcus	
34	Measles	R., empyema L., serofibrinous pleurisy	R., bronchopneumonia L., bronchopneumoina; compress-atelectasis	Streptococcus hemolyticus	
35	"Cold"	R., empyema L., empyema, early	R., bronchopneumonia; compress-atelectasis L., compensatory inflation	Streptococcus hemolyticus	Acute pericarditis
37	"Sore throat"	R., serofibrinous pleurisy L., normal	R., lobar pneumonia L., compensatory inflation	Pneumococcus	Acute peritonitis
38	"Rheumatism"	R., normal L., empyema	R., compensatory inflation L., compress-atelectasis	Streptococcus hemolyticus	Acute pericarditis; no inflammatory changes in lungs
39	"Cold"	R., normal L., empyema	R., compensatory inflation L., compress-atelectasis	Streptococcus hemolyticus	No inflammatory changes in lungs
42	....	R., normal L., serofibrinous pleurisy	R., bronchopneumonia L., bronchopneumoina; compress-atelectasis	Streptococcus hemolyticus	Acute pericarditis
44	"Sore throat"	R., empyema L., normal	R., compress-atelectasis; bronchopneumonia L., bronchopneumonia	Streptococcus hemolyticus	Acute pericarditis
9	....	R., normal L., empyema	R., compensatory inflation L., compress-atelectasis	Streptococcus hemolyticus	No inflammatory changes in lungs; acute pericarditis
51	"Sore throat"	R., normal R., empyema	R., bronchopneumonia L., bronchopneumonia	Streptococcus hemolyticus	
57	"Cold"	R., empyema L., normal	R., bronchopneumonia L., bronchopneumonia	Streptococcus hemolyticus	Acute pericarditis
58	"Sore throat"	R., empyema L., normal	R., compress-atelectasis L., bronchopneumonia	Streptococcus hemolyticus	
62	"Cold"	R., empyema L., empyema	R., bronchopneumonia L., bronchopneumonia	Streptococcus hemolyticus	Acute peritonitis

CHANGES IN THE CARDIOVASCULAR AND THE ABDOMINAL VISCERA

The heart, in the majority of cases of bronchopneumonia and lobar pneumonia, showed right-sided dilatation and cloudy swelling. The aorta, in an unusual percentage of instances, presented atheroma. In forty-two cases, detailed notes concerning the state of the aorta were made. In thirty of these, aortic atheroma was present in the form of elevated, yellow patches or streaks. They were situated mostly in the ascending arch, and to a less extent in the abdominal aorta and other portions of the arch. The thoracic aorta was almost always normal. The atheromatous lesions numbered from a very few to several dozen. They were subintimally located, and varied in consistency from hyaline firmness to definite softening. The coronaries showed distinct involvement in a considerable number of cases. Since the common causes of aortic disease, syphilis and other chronic infections, are not to be elicited in the history or necropsy findings, one is forced to consider the possibility that the present infection is the cause of the intimal changes, which speculation points out that close observation should be made of aortas in these young men coming to necropsy from acute infections. Since our patients are only in the third decade of life, the presence of aortic change is of interest.

The liver usually showed cloudy swelling. The gastro-intestinal tract presented no noteworthy changes.

MENINGITIS

Meningococcic Meningitis.—Five patients came to necropsy. The duration of the disease was 3, 3, 4, 9 and 25 days, respectively. The last patient had a recurrence of infection, since at one time his spinal fluid was clear and sterile. The pathologic picture was similar in all cases. This pia-arachnoid had a loose, edematous structure, and was moderately injected. Fine, yellow lines of perivascular purulent infiltration were seen, especially in the temporoparietal area. A yellow, soft exudate was found chiefly on the base of the brain from the optic chiasm to the cerebellum. The upper surface of the cerebellum showed an especially heavy deposit. In one case practically the entire brain surface was covered, in the other the exudates were largely confined to the temporoparietal lobes. The lateral ventricles contained a turbid fluid in all cases, frank pus in one, and in two instances they were distended to twice their size, forming an internal hydrocephalus. The viscera in all patients showed cloudy swelling, the spleen was slightly follicular, and the lungs in three instances showed areas of bronchopneumonia.

Pneumococcic Meningitis.—This occurred in one instance and was associated with bronchopneumonia. The anatomic picture was similar to that of meningococcic meningitis.

Streptococcic Meningitis.—In all three cases, purulent otitis and mastoiditis was the atrium of the infection.

Parts of the mastoid and petrous bone were bluish black and necrotic. The mastoid cells and internal ear contained greenish pus. The pia-arachnoidal vessels showed greater infection than in meningococcic meningitis. The exudate had a greenish tint, and was more abundant. Punctate, subpial hemorrhages were present. Thrombosis of the right lateral sinus was once seen. The ventricles were overdistended in one instance, and in all cases contained semipurulent fluid. The ependyma was moderately reddened. The visceral changes were more pronounced than those of meningococcic meningitis. Parenchymatous nephritis was the principal lesion noted.

TABLE 4.—FINDINGS IN TEN CASES OF ACUTE PERICARDITIS

No.	Organism Isolated	Condition of Lung	Condition of Pleura
8	Pneumococcus	Lobar pneumonia, R., L.	Acute fibrinous pleuritis, R.
18	Streptococcus hemolyticus	Double bronchopneumonia	Empyema, L.
23	Pneumococcus	Bronchopneumonia, L.	Negative (hydrothorax)
31	Pneumococcus	Negative (compensatory atelectasis)	Negative (hydrothorax)
35	Streptococcus hemolyticus	Bronchopneumonia, R., L.	Empyema, R.
38	Streptococcus hemolyticus	Negative (compensatory atelectasis)	Empyema, L.
42	Pneumococcus	Double bronchopneumonia	Empyema, L.
44	Streptococcus hemolyticus	Bronchopneumonia, L.	Empyema, R.
49	Streptococcus hemolyticus	Negative (atelectasis, L.)	Empyema, L.
57	Streptococcus hemolyticus	Double bronchopneumonia	Empyema, R.

Hemorrhagic Encephalitis.—As has been stated elsewhere, punctate subserous hemorrhages were often observed in streptococcic infections. One case of bronchopneumonia was complicated with a marked hemorrhagic encephalitis. Clinically the patient developed delirium two days after the onset of the bronchopneumonia, and the neck became stiff. Lumbar puncture yielded clear spinal fluid containing a considerable number of polymorphonuclear cells.

The brain showed extensive subpial hemorrhagic extravasations, particularly over the frontal and superior parietal areas. The large veins were greatly congested. In the cut surfaces an unusual number of bleeding points were present. The cortex of the superior portion of the right frontal lobe contained an area of punctate hemorrhages about 2.5 cm. in diameter. In the cortex of the left parietal region a similar hemorrhagic area was found. The ventricles were normal in size, and contained a slightly blood-tinged fluid. The ependyma was normal in size. The internal ear and mastoid cells showed no evidences of inflammation. In microscopic sections, extensive subpial hemorrhages were seen. The vessels in the cortex were greatly distended, and in many instances, packed with polymorphonuclear leukocytes; at many points hemorrhagic extravasations were present in the cortex.

SUMMARY

1. The large majority of deaths were due to infectious diseases.
2. Pneumococcus infection led to a small number of deaths and gave the usual picture.
3. The fatal cases of measles showed the formerly recognized type of measles-bronchopneumonia until a highly virulent and invasive streptococcus changed the character of the pathologic lesions.
4. Empyema arose as secondary to a pneumonitis, and in six cases primarily,
5. The late streptococcus infections have a strong predilection for serous surfaces.
6. Epidemic meningitis was sporadic and of the ordinary form. No cases of spotted fever were seen.

ACUTE STREPTOCOCCIC SEPSIS WITH PURULENT POLYSEROSITIS, SPLENIC TUMOR AND HEMOLYTIC JAUNDICE

PRELIMINARY NOTE

Since the writing of this report, streptococcus infections seem to have taken on a new and highly virulent form. Four postmeasles cases came to necropsy in the week of April 28, 1918. All showed the following anatomic picture: icterus, acute purulent pleuritis, pericarditis, and peritonitis, acute splenic tumor, and multiple subserous hemorrhages.

The lungs contained a few patches of bronchopneumonia. Pure cultures of hemolytic streptococcus were obtained from the heart's blood and the exudate in the pleurae, pericardial and peritoneal cavities.

The findings appear to point to an increase in the invasive powers of the streptococci, probably because of passage through a large number of hosts. A further report will be made.

Effect of Diets on Reproduction.—In a preliminary report (*Science,* March 1, 1918), J. R. Slonaker and T. A. Card of the Department of Physiology of Stanford University summarize their findings on the effects of omnivorous and vegetarian diets on reproduction in the albino rat. The number of pairs constantly under observation was forty, with an equal number as controls, on the same vegetarian diet as the first class, with the addition of some form of animal food. The conclusions so far reached were: The vegetarians were smaller, had less vigor, were less active, had rougher hair and a tendency to sore eyes, while the other group were the reverse in these respects. The earliest ages at which young were born to the omnivorous group was 90 days, while for the vegetarian group it was 119 days, showing that the age of sexual maturity for the former group was 59 days and for the other group 98 days. The average duration of reproductive activity in the omnivorous group was 161 days and for the vegetarian group 111 days, showing that the restricted diet not only delayed the period of reproductive activity, but also shortened it. Vegetarian pairs when they ceased to reproduce were separated and new healthy omnivorous rats mated with them. All these new matings failed to reproduce. The conclusion is that the vegetarian diet produces sterility in both sexes. Only two or three generations of the vegetarian rats could be observed before the line became extinct, forcing the conclusion that the vegetarian diet not only reduces the vitality, the growth and the ability to reproduce, but also tends to the extermination of the race.

RECONSTRUCTION AND REHABILITATION OF DISABLED SOLDIERS

REPORT OF THE SECOND MEETING OF THE SECTION ON MISCELLANEOUS TOPICS, HELD IN THE AUDITORIUM THEATER, THURSDAY, JUNE 13*

The meeting was called to order by Lieut.-Col. Harry E. Mock.

Chairman Mock said: Canada has sent two of her most influential men in the work of reclaiming her disabled soldiers to talk to the American Medical Association and to the people of Chicago. The first, Major John S. Todd, Canada, has seen service in France and is now giving his time and service to the disabled soldiers of Canada.

The Reconstruction of the Canadian Crippled Soldiers and Results

Major John C. Todd said: This meeting is a good thing because our success in this war is going to depend on that which each individual of us does, and success in the war is going to be won no less overseas than right here. In order that we may do what is right it is necessary that we should be correctly informed. It is for this reason that it is a good thing that medical men especially are informing themselves of the right thing to do for disabled sailors and soldiers. Men and women are prone to believe what doctors tell them. If the doctors of this country know the right thing and go about consistently and steadily repeating it, it will not be long before an accurate public opinion is general, constant, fixed, throughout the country. Physicians especially must make Americans understand what must be done by disabled sailors and soldiers and for disabled sailors and soldiers when their war service is at an end. We are all full of sympathy toward the disabled man that comes back, but just as affection for children may be a means of doing injury to a child, so may our sympathy toward disabled men be a means of doing an injury to them.

An English officer, discharged as disabled and wounded after four years of service, complained that he found it difficult to make up his mind concerning the next meal. A civilian is accustomed to order his meals, to do everything for himself. He goes into the army. He serves for four years. During that four years everything is done for him. His meals are ordered. The hour when he should go to his meals is decided for him. What he is to eat at his meals is decided. Suddenly he is wounded, no longer fit to be a soldier. He is turned out in the world and has to unlearn that which has been taught to him with pain and distress. You must help him to unlearn. It would be bad for that man if he were given a holiday for one year without any instruction and preparation for civilian life which is to follow. It would be bad for the country.

How are men to be educated so that they may return to civilian life? The first thing is that their disabilities must be reduced to their lowest measure by all that the wisdom of medicine and surgery can do for them. They must have their disabilities made as small as they may be by the provision of appropriate artificial appliances. The men must be made fit for employment. They must be taught employments. Most of them—80 per cent. of them—will be able to go back to full time occupations and compete with normal people, but there will be some who cannot, and even for those who can compete it will be difficult to find employment. The government must provide means for giving employment to disabled men.

A pension is not a gift. It is not something that is given to disabled men for what they have done. It is a debt paid to them in order to make up to them that measure of capacity which they have lost by reason of their service. (Applause.) You had one fault in your pension law. You should put one authority in charge of your pension legislation, make him a supreme court judge, if you will, and then let no authority interfere with his decisions. That is what has been done in Canada. I am one of three pension commissioners who have the responsibility to disabled men and to the public of Canada of justly distributing pensions, and there is no authority in Canada outside of the united will of our legislature and senate who has the power to alter our decisions.

[The Hart House Training School film was then shown, and a film illustrating "Artificial Limbs in the Making," with comment by Major Todd.]

It is very necessary that the government responsible for distributing artificial limbs to disabled men should have types of limbs made by itself. The government is responsible for keeping those limbs in repair or replacing them. If it were dependent on limbs bought in commerce there would certainly be competition among individual manufacturers, and there would not be any certainty that disabled men would get absolutely the best limb which knowledge can give to them. The Canadian government therefore has established for itself types of limbs. It distributes these to men who need them and it keeps them in repair and replaces them when they are worn out.

Because there will be large numbers of men in Canada using artificial limbs and requiring repairs to them constantly during the next generation, it has been found necessary for the government to look toward training men who will be able to repair those limbs. It will be a nuisance for a man out on a farm on the prairie to send his leg in, perhaps a couple of thousand miles, to a large city in order to have it repaired. The government is training disabled men, largely in the government limb factory, in order that they may go to their communities and set up small repair shops.

These are the general principles on which the rehabilitation of disabled men must proceed. The precise manner in which these principles will apply in the United States must depend on the nature of your own problems. There are one or two things, however, which experience in France, Great Britain, Italy and Canada can teach. One of those things is this: it is necessary to place the whole business under the jurisdiction of one central administrative power.

Lieut.-Col. James Bordley, Jr., vice chairman, then took the chair.

The Conservation and Reclamation of the Industrial Soldiers—A War Measure

Lieut.-Col. Harry E. Mock said: I am here to speak to you about another soldier, the industrial soldier, the soldier of the second line of defense, the man who belongs to that great industrial army which is just as essential to the winning of this war as is the military army, and the man who becomes disabled and wounded without the glorification that comes from such wounds by securing them on the battlefield. In England and France and that portion of Belgium that is left, and the other countries, they have done everything to increase the efficiency of the industrial army in order to speed up production for the purpose of winning the war. If this is good for war time, if these things increase production to win this war, why are they not good for peace times? They answer it themselves by saying they are. Never again will the old order of things exist after this war. Therefore it behooves this country to look forward to that period of social democracy when we are bound to have exactly the same conditions here. As the first country standing out as the land of freedom, we must be the leaders in this national, social democracy; but above that the immediate need is the need of winning the war. I am going to switch now to four lantern slides which I believe will drive home the idea I want to convey better than anything else, namely, that today the need of man power to win this war must compel us to form some means of conserving our industrial army and reclaiming the disabled from that industrial army.

This is a map showing our two armies; the first line of defense is the military army, the second line of defense is the industrial army. Two years ago at Detroit there was born a new organization, of men who were practicing industrial medicine and surgery, the keynote of which is the prevention of disease and accident among the industrial employees of this country.

This is the dream [referring to another picture on the screen] of those men, human conservation, the firm foundation of production. It is done by disease prevention, by accident prevention, plant sanitation, home sanitation, physical selection for jobs, adequate medical and surgical care for those disabled, good wages, good food, recreation and education. As a result, we get the maximum production, by experienced, intelligent, loyal employees.

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* Report of special meetings held as a part of the scientific assembly at the Sixty-Ninth Annual Session of the American Medical Association.

This speaks for itself [referring to another picture]. Here are the by-products from the military army. If we have 2,000,000 soldiers in Europe, and 200,000 are disabled in a year by wounds and by disease, for that is what the figures from the other countries show, 50,000 must be physically reconstructed, and 20,000 must be vocationally retrained and otherwise reclaimed. Here is the industrial army of 30,000,000, soldiers 3,000,000, disabled every year by accidents and by disease, 800,000 that should be physically reconstructed, and 200,000 that should be vocationally retrained and otherwise reclaimed. Are we doing it? Cut out the human scrap heap, salvage the disabled, conserve human life and human energy.

The Selection of New Occupations for Disabled

(Mr. T. B. Kidner read a paper on this subject which will appear in a later issue.)

Lieut.-Col. Mock took the chair. He said: If the people of this country could only understand how much Mr. T. B. Kidner of Canada has given to us to help us develop our plans for the care and the reclaiming of our disabled soldiers, you would come to love him just as those of us down at Washington have who have been working with him lately. When the war came Mr. Douglas C. McMurtrie dreamed great things. He went to the Red Cross and established through their help the American Red Cross Institute for cripples in New York. After he got that going he dreamed greater dreams in establishing Red Cross institutes for cripples elsewhere. They are using the civilian cripple, studying his rehabilitation, the reclaiming of the civilian cripple, with a view of developing the best means of reclaiming the crippled soldier when we have him with us.

The Results of Rehabilitation in Foreign Countries

Mr. Douglas C. McMurtrie said: When the United States entered the war the American Red Cross looked around to see what its responsibilities would be in the field of rehabilitation, and as it thought that government plans might move a little more slowly than unofficial activities, it decided to start one experimental school of reeducation. This school was established between six and nine months ago in New York City and is known as the Red Cross Institute for Crippled and Disabled Men. Its first and most important activity is its educational department, and in this department there have already been started training classes in oxy-acetylene welding, in the making of artificial limbs, in printing, in mechanical drafting and in jewelry work. The institute also maintains an employment department which has been of considerable service during the last six months. During that time it has placed 600 seriously disabled men who could not have been placed in employment through the ordinary channels. It has also carried on a research department which it is felt has been of some use. One of our first duties was to proceed to the collection of a library and the publication of a series of studies that would bring the matter quickly and easily to the attention of the people who contemplated going into similar work. As a result of the preparation, that school could without any difficulty receive tomorrow morning 100 additional pupils and be entirely ready for them. For some time there have been carried on here some excellent training classes in preparing women to do the ward occupations and the earlier work with the men who will later be vocational cases. Through the generosity of one of the citizens of Chicago, it is also probable that there will be established here in this city before long a Red Cross institute similar to the one which I have just described to you in New York. I will interrupt my remarks here to show you a film of one of the French schools of reeducation. This film illustrates the work of the school at Montpellier, which accommodates hundreds of French war cripples. At this school they are taught various trades which have been found successful in that country.

Motor mechanics is one of the most popular trades for disabled men, and our Canadian friends tell us that practically every disabled soldier wants to take up motor mechanics. The first job of the vocational officer is to persuade him not to take that course up and to find out what he is really best fitted for. However, for the men for whom it is a wise choice it offers very good employment. In choosing trades and employments we have to look to the conditions after the war. The British minister of pensions has sent out instructions that no disabled soldiers are to be trained as automobile drivers. The reason for that is that in the present war all transportation is being done by motor trucks, and in consequence a vast army of men have been trained as chauffeurs and they have had the most remarkable experience that any one could get. After the war is over those men will come back to civilian labor and they would compete unduly with the disabled men who might be trained.

All these things may perhaps seem obvious to us, but they are certainly not obvious to the public as a whole. One of the main purposes of this meeting was to come to this audience and ask for their help in putting this principle across, in going to the public and explaining the matter and securing constructive rather than destructive cooperation. In this way we can help our disabled men to the honor of self support rather than to the ignominy of dependence. We are counting on you.

Chairman Mock said: Since last October we have been working in Washington along two lines; one, that these men could be rehabilitated absolutely as a military proposition, and the other, that we needed the greatest possible cooperation between the military and the civilian forces to put these men back as useful units of society as civilians once more.

Mr. C. A. Prosser, of the federal Board for Vocational Education, was to be present and address you today, but at the last moment found he could not come. In his place came Mr. James P. Monroe, a business man of Boston and the vice chairman of the Board for Vocational Education.

The Federal Board for Vocational Education

Mr. James P. Monroe said: The federal Board for Vocational Education is made up of three members of the Cabinet, the Commissioner of Education and three lay members. We have been making a study of this subject both from the side of the industrial cripple and from the side of the war cripple ever since we were organized last July, and we have had the help not only of the Surgeon-General's Department but we have had the help of the American Red Cross through the admirable Red Cross institute in New York, to which Mr. McMurtrie has referred, and also inconceivably valuable help from the Canadian government and through such men as have appeared before you today, representing Canada. The bill which passed unanimously, when signed by the President, is the basis for action by the federal Board for Vocational Education.

The subject is, What is to become of the reconstructed soldier in civil life? We used to regard the returned crippled soldier as a pensioner. Under this new legislation and the attitude of the Surgeon-General's Office we purpose to make him a man. He used to be an object of charity. We purpose to make him an object of pride. We used to throw him on the scrap heap. We now purpose to make him one of the pillars of economic society. There is every reason and every tendency for the soldier when he finds himself more or less crippled by the war or by disease to fall into an attitude of despair and hopelessness. There will be every tendency for him to regard himself as a hero and to accept the propping up which society will be willing to give him. There will be every tendency on the part of well meaning persons to coddle him and make him soft. There is danger if he is kept too long in the process of physical rehabilitation that he will become hospitalized, and there is not a more hopeless object than a hospitalized man, or woman.

Finally, there is the natural timidity of any man to take the first plunge back into industry. All those things have got to be overcome jointly by the Surgeon-General's Department and by the federal Board of Vocational Education, by the Red Cross and by all the other splendid agencies. This thing has got to be handled not on the basis of sentimentality, but on the basis of common sense. There will be the skepticism of employers, who cannot imagine a crippled man being of much use in industry. There will be the suspicion of labor, which will feel that we are going to exploit the man, on the one hand, or else that we are going to crowd our industries with cheap labor which is cheap because it is crippled. There will be, and this is one of the most serious things, there will be some day in the future hard times, when all these occupations that we may have temporarily found for the crippled man will fall like a house of cards under economic pressure, and the tendency will be to forget the debt that we owe these men and to throw them out as the first to be scrapped in industry. All those things have got to be overcome by understanding and by education of the public. The education is an entirely new field, and we have got to educate the schools and the colleges, and especially the industries themselves all over the country, to help us in giving the right sort of vocational reeducation to these men. From the very first minute that you get hold of that man when he comes back from No Man's Land he must be encouraged to develop his initiative, and that initiative must be based first on hope, on the impression that of course he is going to have a little handicap, but on the whole he will be just as good, if not a little better fellow than he was before. It must be based on a knowledge of what is open to that man in civilian and industrial life. It must be based finally on setting before that man from the earliest possible moment, from the moment that he comes out of the ether, if possible, the idea of his working toward a definite industrial, economic and social goal.

I agree absolutely with what was said this morning, that there must be every possible opportunity for recreation and therefore there must be ample grounds; but we must not forget that while recreation is absolutely essential as a therapeutic measure, purposeful work also is an absolute essential as a therapeutic measure, and you cannot get real work that means something to the man unless you can bring him into close contact with industries. For that purpose you must have some place where there is a great variety of industries. The next essential thing, it seems to me, is that this crippled man at the very earliest date should be gotten back, as far as possible, to his old environment. In the first place, because there is no better way, in order to restore that man's normality, than to make him feel that he is just as good a man as he was before by bringing him back among his old associates and in his old vicinity. In the second place, it is necessary to enlist the social backing of the people of his home town. That is, I believe, one of the most essential things in this whole business. Therefore, I cannot see any way out of this thing except to have a great number of small restoration hospitals scattered all over the country so that the man at the earliest possible time shall be brought back into his own vicinity, and this widening out into the industries of that vicinity takes place from what you may call a local hospital.

All this work, however, will be futile unless we organize an efficient follow-up system. The men cannot be trained and turned over into an industry and then let go. We have got to have some system of follow-up to see that he really fits into that industry, to see that he does not get discouraged, to see that he is not exploited, to see that he does not, as there will be tremendous tendency among these men to do, become a rolling stone, trying first this thing and then that thing, seeking here and seeking there and each time falling down to a lower economic level. Finally, we have got to organize social agencies, such as the Red Cross, such as the local agencies, such as all sorts of things that will occur to you, to stand behind the man on the social side, to stimulate him and keep him up with that ambition which is essential, to teach him thrift, for this man is going to have a good deal of money from the government besides that which he earns, and he has got to be taught how to make that money of the most value to him. These social agencies must look after the family conditions to be sure that they are not meddling with his ambition, to be sure that they are not weighing him down with all kinds of conditions that are unnecessary, and finally to do everything they can to hold out the glad hand and to bring that man back into the normal social and economic life. That, after all, is the problem to make this man normal.

Chairman Mock said: We were to have Mr. W. Frank Pearsons, director of the Civilian Relief Division, American Red Cross. Mr. Pearsons has just returned from France and could not come on to Chicago. We have from that same division Mr. Curtis E. Lakeman.

Social and Economic Supervision of the Disabled Soldier

Mr. Curtis E. Lakeman said: The American Red Cross is carrying out, in this field of reconstruction, its characteristic function of supplementing the work of the governmental authorities. Aside from research, experimental and educational work in special institutes, there are two ways in which the Red Cross is peculiarly qualified and obligated to help.

In the first place, it can influence the family to give strong moral support to the soldier under treatment and in training, just as much as to the soldier at the front.

In the second place, it can bring to the man himself the friendly service of a big brother during the whole course of his effort to fit himself for a new occupation, and until he again stands firmly on his own feet in civil life.

The Red Cross is prepared for this duty because it is already caring for the families of soldiers and sailors, supporting their fighting morale by removing causes of worry about home conditions. This is being done so unostentatiously that little is known to the public of this Red Cross activity. There have already been organized throughout the United States more than 3,000 local committees known as home service sections. These are charged with the responsibility of maintaining American standards of family life among the dependents of enlisted men whenever the need of any form of assistance is made known.

It is a misconception to think of these committees as made up of women alone; least of all of those good-hearted but mistaken women whose oversentimental activities in the entertainment of returned soldiers constitute a menace to their true welfare. On the contrary, the type of trained women who lead in Red Cross Home Service gives a strong safeguard against this very danger. But also it is a first principle to place on each home service committee a doctor, a lawyer, a banker and a business man—leading local citizens who are qualified to give to dependents of soldiers practical advice as to their rights and duties under the War Risk Insurance Law, help them adjust mortgages, obtain good medical care, in a word, provide every form of helpfulness which will maintain the solidarity of the family. Here in Chicago over a hundred men are already enlisted as trained volunteers in the local home service section.

To these Red Cross committees in every city and county of the United States the government will be able to turn, in confidence that the follow-up of the disabled soldier is in competent and sympathetic hands. Whenever the man goes to a distant city for industrial training or to take up a new vocation, an experienced older brother will be ready and anxious to stand by him and talk over those personal problems which he may not wish to discuss with a government official, no matter how well equipped and conscientious the latter may be.

It is these committees, made up both of practical men of affairs and trained sympathetic women, that will bring a powerful influence to bear on the soldier through his family. The support of the family must be given the soldier at every stage of his hospital treatment, vocational training and early efforts to make his way in industry. The returned soldier has one more battle to fight for his country and his own future. Under the wise plan of the national government, the man must himself make the mental and physical effort to prepare for a new occupation, and a future of self support. On the education of the man's own will, not on military or economic compulsion, depends the success of the whole system. It is for the disabled soldier himself to decide whether he shall contribute to the economic and social stability of his family and his country, or shall degenerate into a mere pensioner or even a street beggar. There is not time, nor is it necessary to do more than suggest the enormous influence which the family can exert on that momentous decision. In advising the family what it can and should do to help the man, the Red Cross has the machinery already set up in its home service organization, and eagerly awaits every opportunity to discharge in this way its share of responsibility for the reconstruction of the disabled soldier.

Michael Dowling

The Michael Dowling film was shown. At the close of the showing of the film Mr. Dowling walked on the platform.

Mr. Michael Dowling said: *Ladies and Gentlemen:* I think there is danger of too much being attempted and making it too easy for the men who come back with a leg gone or an arm gone. Now, an arm being gone is a mere bagatelle, two arms don't amount to anything, and I can assure you from personal experience that it doesn't mean anything to have both legs and both hands gone. There is just as much fun in living. I used to be able to drive a team of horses just as well as anybody and used my right arm for the usual purpose in courting. I can still handle an automobile, although I think an automobile is an unnecessary nuisance to a couple who wish to get married. What the so-called cripple needs is not charity but a chance. The fight that wants to be put up at this time is not between money and opportunity or the loss of legs or the loss of arms or eyes or other members of the body, but this is a fight between General Gorgas and general despondency. Every community and every family ought to see to it that every other member of the family pays no attention to a hunchback, never looks at a man with clubfoot as he walks down the street, especially never looks at his deformity, and never looks at a man with a peg leg or with an empty coat sleeve. It should be taught in the schools. It should be preached from the pulpits.

PROCEEDINGS OF THE CHICAGO SESSION

THE SIXTY-NINTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION,
HELD AT CHICAGO, JUNE 10-14, 1918

MINUTES OF THE SECTIONS

SECTION ON PRACTICE OF MEDICINE

WEDNESDAY, JUNE 12—MORNING

The section was called to order at 9:30 by the chairman, Dr. Lawrence Litchfield, Pittsburgh.

The secretary, Dr. James S. McLester, Birmingham, Ala., read excerpts from the by-laws regarding discussion of papers.

The chairman asked Dr. W. L. Bierring, Des Moines, and Dr. Charles F. Hoover, Cleveland, to take the places on the executive committee, for this meeting, of Drs. Thomas McCrae, Philadelphia, and Roger S. Norris, Cincinnati, who were unable to be present.

The chairman named for the nominating committee Drs. Horace D. Arnold, Boston; Willard J. Stone, Toledo, and Thomas D. Coleman, Augusta, Ga.

The chairman, Dr. Lawrence Litchfield, Pittsburgh, read the chairman's address, entitled "Glucose Intravenously as a Therapeutic Agent." No discussion.

Dr. Edward C. Rosenow, Rochester, Minn., read a paper on "Further Studies in the Treatment of Acute Poliomyelitis with Immune Horse Serum." Discussed by Drs. P. S. Roy, Washington, D. C., and Edward C. Rosenow, Rochester, Minn.

Dr. Henry A. Christian, Boston, read a paper on "Pulmonary Compression Signs Associated with Fibrinous Pericarditis." Discussed by Drs. William H. Robey, Jr., Boston; H. D. Power, San Francisco; Charles G. Jennings, Detroit; George D. Head, Minneapolis; Lawrence Litchfield, Pittsburgh; Granville N. Ryan, Des Moines, Iowa, and Henry A. Christian, Boston.

Dr. Sydney R. Miller, Baltimore, read a paper on "Ulceration of the Soft Palate Resembling Syphilitic Perforating Ulcer Due to Fusiform Bacilli and Spirillae (Vincent's Angina)." Discussed by Drs. W. H. Marshall, Camp Grant, Rockford, Ill.; Frank J. Sladen, Detroit; Henry A. Christian, Boston, and Sydney R. Miller, Baltimore.

WEDNESDAY, JUNE 12—AFTERNOON

Dr. William W. Herrick, New York, read a paper on "The Early Diagnosis and Intravenous Serum Treatment of Epidemic Cerebrospinal Meningitis." Discussed by Drs. J. B. Guthrie, New Orleans; W. L. Bierring, Des Moines, Iowa; Powhatan S. Schenck, Norfolk, Va.; F. F. Russell, Washington, D. C.; Walter W. Hamburger, Chicago, and William W. Herrick, New York.

Dr. William N. Bispham, Fort Riley, Kan., read a paper on "The Training of the Medical Officers in the Army." No discussion.

Dr. William H. Robey, Jr., Boston, read a paper on "Neurocirculatory Asthenia." Discussed by Sir James Mackenzie, London, England, and Drs. Louis M. Warfield, Milwaukee; B. S. Oppenheimer, New York; Abraham Jacobi, New York, and William H. Robey, Jr., Boston.

Dr. Joseph H. Pratt, Boston, read a paper on "Newer Aspects of Digitalis Therapy." Discussed by Sir James Mackenzie, London, England.

The following officers were elected: chairman, Dr. Walter L. Bierring, Des Moines, Iowa; vice chairman, Dr. Charles G. Jennings, Detroit; secretary, Dr. James S. McLester, Birmingham, Ala.; delegate, Dr. George D. Head, Minneapolis.

Dr. Horace D. Arnold, Boston, read a paper on "War and Medical Education." No discussion.

FRIDAY, JUNE 14—MORNING

The following papers were read as a symposium on "Pneumonia":

Dr. Arthur A. Small, Chicago: "Unique Findings Gathered from the Observation of Eleven Hundred Cases of Pneumonia in a Base Hospital."

Dr. Joseph L. Miller, Chicago: "An Epidemic of Streptococcus Pneumonia and Empyema at Camp Dodge."

Dr. Willard J. Stone, Toledo, Ohio: "A Clinical Study of Eight Hundred Cases of Pneumonia."

Dr. James G. Cumming, Ann Arbor, Mich.: "Streptococcus Pneumonia."

Dr. William G. MacCallum, Baltimore: "The Pathology of the Pneumonia of the Army Camp."

Dr. Ralph A. Kinsella, St. Louis: "Practical Consideration of Epidemiology Drawn from a Classification of Streptococci."

These papers were discussed by Drs. William H. Welch, Baltimore; Lawrence Litchfield, Pittsburgh; F. F. Russell, Washington, D. C.; Rufus I. Cole, New York; Walter P. Bliss, New York; C. Hugh McKenna, Chicago; George F. Dick, Chicago, and Edward C. Rosenow, Rochester, Minn.

FRIDAY, JUNE 14—AFTERNOON

Dr. Clyde L. Cummer, Cleveland, read a paper on "Later Results of the Intraspinal Treatment of Cerebrospinal Syphilis, Based on Four Years' Observation." Discussed by Dr. John A. Fordyce, New York.

Dr. George H. Lathrope, Morristown, N. J., read a paper on "Relation of Mastoiditis to Acute Infectious Conditions." Discussed by Drs. John B. Potts, Omaha; Arthur A. Small, Chicago; M. E. Scott, Adel, Iowa; Abraham Zingher, New York, and George H. Lathrope, Morristown, N. J.

Dr. Llewellyn Sale, St. Louis, read a paper on "A Study of Diaphragmatic Movements in Acute Abdominal Inflammations." Discussed by Drs. J. B. Guthrie, New Orleans; F. M. Pottenger, Monrovia, Calif.; M. E. Scott, Adel, Iowa; H. N. McDonald, Minneapolis, and Llewellyn Sale, St. Louis.

The paper of Dr. Joseph A. Capps, Chicago, on "The Control of Cross Infections by Masking of Patients," was then read. Discussed by Drs. James S. McLester, Birmingham, Ala.; John Alden Lichty, Pittsburgh; H. P. Greeley, Madison, Wis.; Albert R. Trapp, Springfield, Ill.; Charles H. Lovewell, Chicago; Edward F. Wells, Chicago, and Granville N. Ryan, Des Moines.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

WEDNESDAY, JUNE 12—MORNING

The meeting was called to order at 9:24 by the chairman, Dr. E. Starr Judd, Rochester, Minn.

Dr. Truman W. Brophy, Chicago, read a paper on "Congenital Cleft Palate and Harelip." Discussed by Drs. A. J. Ochsner, Chicago; Arbuthnot Lane, London, England; Charles H. Mayo, Rochester, Minn.; John B. Roberts, Philadelphia, and Truman W. Brophy, Chicago.

The following papers were read as a symposium on "The Thyroid":

Dr. Charles H. Mayo, Rochester, Minn.: "The Principles of Thyroid Surgery."

Dr. Donald Guthrie, Sayre, Pa.: "Temporary Loss of Voice Following Thyroidectomy."

Dr. Edward G. Jones, Atlanta, Ga.: "Goiter in the Southeast."

These three papers were discussed by Drs. Charles N. Dowd, New York; Arbuthnot Lane, London, England; Miles F. Porter, Fort Wayne, Ind.; Rollo C. Dugan, Ottawa, Kan.;

H. J. Stewart, Oak Park, Ill.; J. W. McDonald, Chicago; C. H. Magee, Burlington, Iowa; Edwin P. Sloan, Bloomington, Ill.; John W. Long, Greensboro, N. C.; C. H. Mayo, Rochester, Minn.; Donald Guthrie, Sayre, Pa., and Edward G. Jones, Atlanta, Ga.

Dr. Willy Meyer, New York, read a paper on "Glycophilia." Discussed by Drs. W. S. Schrayer, Chicago, and Willy Meyer, New York.

Dr. Ralph E. Morter, Milwaukee, read a paper on "End-Results in Hodgkin's Diseases." Discussed by Vincent A. Lapenta, Indianapolis; William C. MacCarthy, Rochester, Minn., and Ralph E. Morter, Milwaukee.

Wednesday, June 12—Afternoon

The meeting was called to order at 2:15 by the chairman, Dr. E. Starr Judd, Rochester, Minn.

Dr. Judd read the chairman's address, entitled "The Surgery of the Gallbladder and Biliary Ducts." No discussion.

Dr. J. Shelton Horsley, Richmond, Va., read a paper on "Reconstruction of the Common Duct from the Experimental Standpoint."

Dr. LeGrand Guerry, Columbia, S. C., read a paper on "Clinical Report on Reconstruction of the Common and Hepatic Ducts."

These two papers were discussed by Drs. Arthur G. Sullivan, Madison, Wis.; C. N. Davis, Chicago; L. L. McArthur, Chicago; H. O. Marcy, Boston; I. J. Straus, Chicago, and J. Shelton Horsley, Richmond, Va.

Dr. J. Earl Else, Portland, Ore., read a paper on "Rôle of the Cystic Duct in Recurring Cholecystitis." No discussion.

Dr. Edward W. Archibald, Montreal, read a paper on "The Ultimate Results in Cases of Chronic and Subacute Pancreatitis." Discussed by Drs. W. D. Haggard, Nashville, Tenn.; E. Starr Judd, Rochester, Minn.; J. Earl Else, Portland, Ore.; Rollo C. Dugan, Ottawa, Kan., and Edward W. Archibald, Montreal.

Friday, June 14—Morning

The meeting was called to order at 9:30 by the chairman, Dr. E. Starr Judd, Rochester, Minn.

Dr. Hermann B. Gessner, New Orleans, read a paper on "The Therapeutics of Tetanus." Discussed by Samuel J. Meltzer, New York; A. J. Ochsner, Chicago; W. Estell Lee, Philadelphia; Carl J. Holman, Mankato, Minn.; Clark W. Brooks, Detroit, and Hermann B. Gessner, New Orleans.

The following officers were elected: chairman, Dr. John T. Bottomley, Boston; vice chairman, Dr. LeGrand Guerry, Columbia, S. C.; secretary, Dr. Eugene H. Pool, New York; acting secretary, Dr. George P. Müller, Philadelphia; delegate, Dr. Jabez N. Jackson, Kansas City, Mo.; alternate, Dr. Donald Guthrie, Sayre, Pa.

Dr. W. Estell Lee, Philadelphia, Pa., read a paper on "The Use of Dichloramin-T and Other Antiseptics in War Surgery." Discussed by Drs. Edward H. Ochsner, Chicago; Fenton B. Turck, New York, and Lee W. Estell, Philadelphia.

Dr. Frank G. Nifong, Columbia, Mo., read a paper on "The Hodgen Extension Suspension Splint and Its Exemplification in Both Civil and War Surgery." Discussed by Drs. H. D. Wood, Fayetteville, Ark.; Daniel N. Eisendrath, Chicago; F. Reder, St. Louis; C. W. More, Eveleth, Minn.; E. M. Sanders, Nashville, Tenn., and Frank G. Nifong, Columbia, Mo.

Dr. Howard W. Haggard, New Haven, Conn., read a paper on "The Fall of the Alkaline Reserve Under Surgical Conditions: Its Effects and Prevention." Discussed by Dr. Fenton B. Turck, New York, and Howard W. Haggard, New Haven, Conn.

Friday, June 14—Afternoon

The meeting was called to order at 2:30 by the chairman.

Dr. George N. Kreider, Springfield, Ill., read a paper on "Gastroptosis: Its Cause, Prevention and Cure, with Special Reference to the Duret-Rovsing Operation." Discussed by Drs. Carl E. Black, Jacksonville, Ill.; George P. Müller, Philadelphia, and George N. Kreider, Springfield, Ill.

Dr. Arthur C. Strachauer, Minneapolis, read a paper on "A New Principle in the Surgical Treatment of Brain Tumors." Discussed by Dr. L. L. McArthur, Chicago, and Arthur C. Strachauer, Minneapolis.

Dr. Walter E. Sistrunk, Jr., Rochester, Minn., read a paper on "Kondoléon's Operation." Discussed by Drs. Hubert A. Royster, Raleigh, N. C.; H. B. Gessner, New Orleans; H. R. Decker, Pittsburgh, and Walter E. Sistrunk, Jr., Rochester, Minn.

SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

Wednesday, June 12—Morning

The section was called to order at 9:30 by the chairman, Dr. Brooke M. Anspach, Philadelphia.

Dr. Anspach read the chairman's address, entitled "Enterostomy and Enterocolostomy in the Treatment of Intestinal Obstruction Following Pelvic Operations."

Dr. Anspach, in the absence of the members of the Executive Committee, appointed temporarily on this committee Drs. C. Jeff Miller, New Orleans; E. E. Montgomery, Philadelphia, and W. P. Manton, Detroit.

Dr. Alfred A. Strauss, Chicago, read a paper on "The Clinical Observations and Results of the Newer Methods of Observations in Congenital Pyloric Stenosis and Gastric and Duodenal Ulcers."

Dr. William D. Haggard, Nashville, read a paper on "Hypertrophic Pyloric Stenosis in Infancy."

These papers were discussed by Drs. Frank X. Walls, Chicago; Weller Van Hook, Chicago; I. A. Abt., Chicago; John W. Keefe, Providence, R. I.; Peter B. Salatich, New Orleans; Alfred A. Strauss, Chicago and William D. Haggard, Nashville.

Dr. Daniel N. Eisendrath, Chicago, read a paper on "The Relation of Anomalies of the Bile Ducts and Blood Vessels to Accidents in Biliary Surgery." Discussed by Drs. William D. Haggard, Nashville, Tenn.; E. E. Montgomery, Philadelphia; J. A. Attridge, Port Huron, Mich., and Daniel N. Eisendrath, Chicago.

Dr. Leigh F. Watson, Chicago, read a paper on "Goiter in Pregnancy." Discussed by Drs. James W. Markoe, New York; Charles H. Mayo, Rochester, Minn., and Leigh F. Watson, Chicago.

Dr. William J. Mayo, Rochester, Minn., contributed a paper on "Secondary Tuberculous Peritonitis." Discussed by Drs. Robert T. Morris, New York; C. A. L. Reed, Cincinnati; Daniel N. Eisendrath, Chicago; Horace G. Wetherill, Denver, and Charles H. Mayo, Rochester, Minn.

Dr. J. Riddle Goffe, New York, read a paper on "Abdominal Visceropexy: An Original Method, with a Report of Cases." Discussed by Drs. C. A. L. Reed, Cincinnati; Nathan Rosewater, Cleveland; William T. Reynolds, Kansas City, Mo.; A. H. Aaron, Buffalo, and J. Riddle Goffe, New York.

Wednesday, June 12—Afternoon

Dr. Ira L. Hill, New York, read a paper on "Extending the Care of Pregnancy." Discussed by Drs. Wilmer Krusen, Philadelphia; J. H. Carstens, Detroit; Otto J. Stein, Chicago, and Ira L. Hill, New York.

Dr. Paul Titus, Pittsburgh, read a paper on "Uterine Inertia; Summary of a Series of Cases." Discussed by Drs. Rudolph W. Holmes, Chicago, and Paul Titus, Pittsburgh.

Dr. George W. Kosmak, New York, read a paper on "The Use and Abuse of Pituitary Solution." Discussed by Drs. J. B. De Lee, Chicago; J. L. Bubis, Cleveland; Jennings C. Litzenberg, Minneapolis; C. S. Bacon, Chicago, and W. P. Manton, Detroit.

Dr. John Young Brown, St. Louis, read a paper on "Pus in the Female Pelvis: A Surgical Retrospect."

Dr. Harry P. Ritchie, St. Paul, read a paper on "Rectal Section for Pelvic Abscess."

These two papers were discussed by Drs. J. H. Carstens, Detroit; E. E. Montgomery, Philadelphia; G. N. Thomas, El Paso, Texas; James Mather Pfeiffenberger, Alton, Ill.; Horace G. Wetherill, Denver; Peter B. Salatich, New Orleans; Robert T. Morris, New York; John Young Brown, St. Louis, and Harry P. Ritchie, St. Paul.

Dr. W. P. Manton, Detroit, read a paper on "Parotitis Following Induced Abortion in a Case of Pernicious Vomiting in Pregnancy." Discussed by Drs. E. E. Montgomery, Philadelphia; M. E. Klingler, Garrett, Ind.; Stephen E. Tracy, Philadelphia, and W. P. Manton, Detroit.

FRIDAY, JUNE 14—MORNING

Dr. Henry T. Byford, Chicago, was elected temporary chairman in the absence of Dr. Anspach, returned to the service.

Dr. John B. Deaver, Philadelphia, read a paper on "Avoidable Traumatic Abdomen." Discussed by Drs. Stephen E. Tracy, Philadelphia; Peter B. Salatich, New Orleans; Emil Novak, Baltimore; A. E. Walker, Anthony, Kan.; A. P. Butt, Davis, W. Va., and John B. Deaver, Philadelphia.

Dr. Franklin H. Martin, Chicago, spoke on "How Surgeons Can Help Win the War." Discussed by Dr. Alfred A. Strauss, Chicago, and Dr. Franklin H. Martin, Chicago.

Dr. Joseph Rilus Eastman, Indianapolis, read a paper on "The Question of Operation in Abdominal Gunshot Injuries." Discussed by Drs. Daniel N. Eisendrath, Chicago, and John Young Brown, St. Louis.

The following officers were elected: chairman, Dr. Thomas J. Watkins, Chicago; vice chairman, Dr. John W. Keefe, Providence, R. I.; secretary, Dr. Sidney A. Chalfant, Pittsburgh; delegate, Dr. F. F. Simpson, Pittsburgh.

Dr. Ira L. Hill, New York, presented for the consideration of the Section on Obstetrics, Gynecology and Abdominal Surgery a resolution "That the American Medical Association appeal to the U. S. government for the appointment of a national commission for the reduction of mortality in childbirth." This resolution was on motion adopted and referred to the delegate of the section for presentation to the House of Delegates of the American Medical Association for action. (No action by the House of Delegates at the 1918 session.)

Dr. Willard Bartlett, St. Louis, read a paper on "Treatment of Incisional Ventral Hernia by the Transplantation of Fascia Lata." Discussed by Drs. Weller Van Hook, Chicago; Alfred A. Strauss, Chicago; C. H. Magee, Burlington, Iowa; Arthur E. Hertzler, Kansas City, Mo.; Peter B. Salatich, New Orleans; Albert Goldspohn, Chicago; S. E. Williams, Chippewa Falls, Wis.; W. P. Manton, Detroit, and Willard Bartlett, St. Louis.

Dr. John W. Keefe, Providence, R. I., read a paper on "The Use of the Rubber Roll in Abdominal Surgery." Discussed by Drs. Albert Goldspohn, Chicago; Melvin J. Locke, Bellefonte, Pa., and John W. Keefe, Providence, R. I.

Dr. Emil Novak, Baltimore, read a paper on "Infantilism and Other Hypoplastic Conditions of the Uterus." No discussion.

FRIDAY, JUNE 14—AFTERNOON

Dr. Nathaniel R. Mason, Boston, and Dr. Frank C. W. Konrad, Boston, presented a paper on "Paravertebral Anesthesia, with Report of One Hundred Cases." Discussed by Drs. Arthur E. Hertzler, Kansas City, and Dr. Frank C. W. Konrad, Boston.

Dr. Arthur E. Hertzler, Kansas City, Mo., read a paper on "The Pathology of Hemorrhagic Myomas and Their Relation to Sarcoma." Discussed by Drs. Emil Novak, Baltimore; Bertha Van Hoosen, Chicago, and Arthur E. Hertzler, Kansas City, Mo.

Dr. Edward A. Weiss, Pittsburgh, read a paper on "The Radical Treatment of Cancer of the Cervix by Igni Extirpation." Discussed by Drs. Albert Goldspohn, Chicago; George Gellhorn, St. Louis; Louis E. Schmidt, Chicago; Bertha Van Hoosen, Chicago; John W. Keefe, Providence, R. I.; J. A. Pettit, Portland, Ore.; Edward A. Weiss, Pittsburgh, and Henry P. Newman, San Diego.

Dr. George Gellhorn, St. Louis, read a paper on "The Conservation of Ovaries After Hysterectomy, with a New Technic of Extirpation of the Uterus." Discussed by Drs. Henry T. Byford, Chicago; Peter B. Salatich, New Orleans; Henry P. Newman, San Diego; C. H. Magee, Burlington, Iowa; Harvey P. Jack, Hornell, N. Y., and George Gellhorn, St. Louis.

Dr. K. I. Sanes, Pittsburgh, read a paper on "Age of Menopause: Observations Based on Statistical Data of Eight Hundred Menopause Cases." Discussed by Dr. Curtis S. Foster, Pittsburgh.

Dr. Stephen E. Tracy, Philadelphia, read a paper on "Plastic Operations in the Vagina and on the Pelvic Floor." Discussed by Drs. Henry P. Newman, San Diego; Albert Goldspohn, Chicago, and Dr. Stephen E. Tracy, Philadelphia.

SECTION ON OPHTHALMOLOGY

WEDNESDAY, JUNE 12—MORNING

In the absence of the chairman, Dr. Alexander Duane, New York, the vice chairman, F. Phinizy Calhoun, Atlanta, Ga., presided. Dr. Edgar S. Thomson, New York, acted as secretary. The session was called to order at 9:15 by the vice chairman, who made a brief address.

The chairman's address, entitled "How May the Physical Standards of the Service Profitably Be Modified?" was read.

Dr. F. Park Lewis, Buffalo, moved that the section arrange a round table at which certain questions may be propounded and answered.

Dr. Edward Jackson, Denver, moved as a substitute that the pending motion, as well as similar suggestions, be referred to the Executive Committee. Seconded and carried.

Dr. Bulson presented the report on the Knapp Testimonial Fund Committee which, on motion duly made and seconded, was ordered received and filed.

Dr. John E. Weeks, New York, read a paper on "Disciform Keratitis." Discussed by Drs. William Zentmayer, Philadelphia; John Green, Jr., St. Louis; Arthur G. Bennett, Buffalo; Will Walter, Chicago; Edgar S. Thomson, New York; Arthur J. Bedell, Albany, N. Y.; F. Park Lewis, Buffalo; John M. Wheeler, New York; R. H. von Kotsch, Chicago; Jesse S. Wyler, Cincinnati, and John E. Weeks, New York.

Dr. Robert J. Curdy, Kansas City, Mo., read a paper on "The Action of Miotic Drugs on Eyes, with Incomplete Sphincter Iritis." Discussed by Drs. Frank C. Todd, Minneapolis, and Robert J. Curdy, Kansas City, Mo.

Dr. John M. Wheeler, New York, read a paper on "Paralysis of the Sixth Cranial Nerve, Associated with Otitis Media." Discussed by Drs. Walter H. Snyder, Toledo, Ohio; H. H. Stark, El Paso, Texas, and John M. Wheeler, New York.

Dr. Lucien Howe, Buffalo, read a paper on "The Relation of Hereditary Eye Defects to Genetics and Eugenics." Discussed by Drs. Howard H. Newman, Chicago; F. Park Lewis, Buffalo; L. M. Loeb, Chicago; F. G. Stueber, Lima, Ohio, and Lucien Howe, Buffalo.

Dr. William R. Thompson, Fort Worth, Texas, read a paper on "The Rational Etiology and Satisfactory Treatment of Dacryocystitis." Discussed by Drs. Harry W. Woodruff, Joliet, Ill.; John Green, Jr., St. Louis; Arthur E. Prince, Springfield, Ill.; Harold Gifford, Omaha; Melville Black, Denver; G. H. Mundt, Chicago, and William R. Thompson, Fort Worth, Texas.

Dr. Lucien Howe, Buffalo, presented the following resolution:

> *Resolved*, That a committee be appointed by the chair to report what action, if any, should be recommended by this section for the prevention of inherited blindness, this committee to be composed of one ophthalmologist, one professional geneticist and one practitioner, especially conversant with the good and also with the bad effects of sterilization. The members of this committee shall have power to add to their number as they deem advisable.

Dr. Howe moved the adoption of the resolution. Seconded and carried.

Dr. Howe presented the report of the Committee on Collective Investigation Concerning Ocular Muscles and moved the adoption of the report. On motion, duly seconded and carried, the report was adopted.

Wednesday, June 12—Afternoon

Vice Chairman Calhoun called the session to order at 2 o'clock.

The vice chairman announced that the resolution which was introduced by Dr. Lucien Howe at the preceding session called for the appointment of a committee for the prevention of inherited blindness. The chairman stated that this committee should consist of Dr. Howe, as chairman, and Drs. H. H. Laughlin and John A. Reilly, this being with the approval of the Executive Committee.

Dr. T. B. Holloway, Philadelphia, exhibited an instrument demonstrating the various forms of refraction.

Dr. George E. de Schweinitz, Philadelphia, read a paper on "Some Aspects of Military Ophthalmic Surgery."

Dr. William H. Wilder, Chicago, read a paper on "Visual Standards of the U. S. Army."

Dr. Waid E. Carson, Pittsburgh, read a paper on "Visual Standards of the U. S. Navy."

The paper of Dr. Allen Greenwood, Boston, on "The Eyes of the Army," was presented in a short summary by Dr. Hiram Woods, Baltimore.

Dr. Edward Jackson, Denver, read a paper on "Common Changes in Regular Astigmatism and Their Causes." Discussed by Drs. Arthur G. Bennett, Buffalo; William Zentmayer, Philadelphia; Joseph S. Lichtenberg, Kansas City, Mo., and Edward Jackson, Denver.

Dr. Howard S. Clark, Minneapolis, read a paper on "Maculocerebral Degeneration with Dementia." Discussed by Drs. F. Park Lewis, Buffalo; Harold Gifford, Omaha, and Edward J. Bernstein, Detroit.

Friday, June 14—Morning

The section was called to order at 9:15 by Vice Chairman Calhoun.

The following officers were elected: chairman, Dr. Cassius D. Wescott, Chicago; vice chairman, Dr. Thomas B. Holloway, Philadelphia; secretary, Dr. Edgar S. Thomson, New York; delegate, Dr. Walter B. Lancaster, Boston; alternate, Dr. Edward H. Cary, Dallas, Texas.

Dr. Edward Jackson, Denver, was reelected as a member of the American Board of Ophthalmic Examination, for the term of three years beginning with the expiration of his present term, January 1.

Dr. Thomson, on behalf of the chairman of the committee, read the report of the local chairman of the Committee on Conservation of Vision.

On motion, duly seconded and carried, the report was accepted.

Dr. Hiram Woods, Baltimore, presented the report of the American Board for Ophthalmic Examination.

On motion duly seconded and carried, the report was received and filed.

The report of the Committee on Standardizing Test Cards was presented by Dr. Ewing, on behalf of the chairman, Dr. Jackson.

On motion duly seconded and carried, the report was received and filed.

The Committee on Award of the Knapp Medal had no report to make.

The next order of business was the election of a committee on Award of the Knapp Medal. The following were selected: Drs. W. H. Wilder, Chicago; Walter R. Parker, Detroit, and Arnold Knapp, New York.

In view of the serious illness of Dr. Adolf Alt, an ex-chairman of this section, Dr. Greene moved that the Section on Ophthalmology extend to Dr. Adolf Alt its greetings and best wishes for his speedy restoration to health. Seconded and carried.

Dr. Zentmayer moved that a resolution of sympathy be sent to Dr. Wescott, chairman elect of this section for the ensuing year (Dr. Wescott having been recently operated on and being still in the hospital), the resolution also expressing the wishes of the section for his speedy recovery. Seconded and carried.

Dr. William W. Kahn, Detroit, read a paper on "Pollakiuria or Excessive Frequency of Micturition as a Functional Disturbance Due to Eyestrain." Discussed by Drs. Isaac Hartshorne, New York, and William W. Kahn, Detroit.

Drs. John Green, Jr., and William F. Hardy, St. Louis, presented a paper on "Astigmatism Against the Rule." Discussed by Drs. Walter B. Lancaster, Boston; H. B. Lemere, Omaha; William W. Kahn, Detroit; Clark W. Hawley, Chicago; Edgar S. Thomson, New York, and William F. Hardy, St. Louis.

Dr. James G. Dwyer, New York, read a paper on "Focal Infections of the Eye from the Intestinal Tract." Discussed by Drs. Edgar S. Thomson, New York; Hiram Woods, Baltimore; Harry Gradle, Chicago; Clark W. Hawley, Chicago; Walter B. Lancaster, Boston; Will Walter, Chicago, and James G. Dwyer, New York.

Dr. F. Phinizy Calhoun, Atlanta, Ga., read a paper on "Alterations in the Visual Fields Associated with Pellagra." Discussed by Drs. Edward V. L. Brown, Chicago, and F. Phinizy Calhoun, Atlanta, Ga.

Dr. Edward H. Cary, Dallas, Texas, read a paper on "A Study of the Histology and Pathology of the Superstructure of the Lid Occurring in Trachoma," with motion pictures. Discussed by Drs. Vard H. Hulen, San Francisco; C. H. Dewey, Washington, D. C.; Arthur E. Prince, Springfield, Ill., and Edward H. Cary, Dallas, Texas.

Friday, June 14—Afternoon

The section was called to order by the vice chairman.

Dr. Hunter H. Turner, Pittsburgh, read a paper on "The Etiology of Phlyctenular Ophthalmia." Discussed by Drs. Edward B. Heckel, Pittsburgh; Henry E. Goldberger, Chicago, and Hunter H. Turner, Pittsburgh.

Dr. Arthur E. Ewing, St. Louis, read a paper on "Postciliary Scleral Trephining for Acute Glaucoma." Discussed by Drs. William F. Hardy, St. Louis, and Arthur E. Ewing, St. Louis.

Dr. Harold Gifford, Omaha, read a paper on "The Treatment of Blood Cysts of the Orbit." The discussion on this paper by Dr. Albert E. Bulson, Fort Wayne, Ind., was read by the secretary owing to the absence of Dr. Bulson. The paper was further discussed by Dr. Harold Gifford, Omaha.

Dr. Melville Black, Denver, read a paper on "The Management of Certain Intractable Lid Conditions." Discussed by Drs. J. S. Clark, Freeport, Ill.; Oliver Tydings, Chicago, and Dr. H. B. Lemere, Omaha.

Dr. Arthur E. Prince, Springfield, Ill., read a paper on "An Operation for Cataract Especially Adapted to Cases of Intractable Sepsis of the Conjunctiva or the Lacrimal Sac."

Drs. William H. Fisher and H. D. Thornburg, Chicago, presented a paper entitled "A Method of Acquiring Cataract Technic Leading to the Smith-Indian Intracapsular."

These two papers were discussed by Drs. Louis D. Green, San Francisco; Vard H. Hulen, San Francisco; Clark W. Hawley, Chicago; John W. Wright, Columbus, Ohio; Lewis K. Beck, San Antonio, Texas; Ira E. Hoffman, Chicago; G. H. Mundt, Chicago; Arthur E. Prince, Springfield, Ill.; H. D. Thornburg, Chicago, and William A. Fisher, Chicago.

SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

Wednesday, June 12—Morning

The section was called to order at 9:20 by the chairman, Dr. Greenfield Sluder, St. Louis.

Dr. Sluder read the chairman's address, entitled "The Specialist's Relation to the American Medical Association." Discussed by Drs. Wendell C. Phillips, New York, and George F. Cott, Buffalo.

The secretary, Dr. L. W. Dean, Iowa City, Iowa, moved that the acting chairman, Dr. Thomas Hubbard, Toledo, Ohio, appoint a committee of three on chairman's address, this committee to report at the Friday morning session. Seconded and carried. The following were appointed: Drs. William B. Chamberlin, Cleveland; George E. Shambaugh, Chicago, and J. A. Stucky, Lexington, Ky.

Dr. Chevalier Jackson, Philadelphia, read a paper on "Acromegaly of the Larynx." Discussed by Drs. William B. Chamberlin, Cleveland, and Chevalier Jackson, Philadelphia.

Dr. Thomas Hubbard, Toledo, Ohio, read a paper on "Certain Traumatic Lesions of the Esophagus." Discussed by Drs. Chevalier Jackson, Philadelphia; George F. Keiper, Lafayette, Ind.; J. A. Stucky, Lexington, Ky.; George F. Cott, Buffalo; William B. Chamberlin, Cleveland; Joseph C. Beck, Chicago; G. C. Kneedler, Pittsburgh; Eugene L. Myers, St. Louis, and Dr. Thomas Hubbard, Toledo, Ohio.

Dr. Wendell C. Phillips, New York, moved that a committee be appointed by the chairman of this section to prepare a statement recommending legislation in regard to the labeling of caustic preparations, and that this appeal be made through the Council on Pharmacy and Chemistry of the American Medical Association. Seconded and carried.

Dr. Hugh T. Patrick, Chicago, read a paper on "Indurative Headaches." Discussed by Drs. George E. Shambaugh, Chicago; H. W. Loeb, St. Louis; Oliver Tydings, Chicago; Arthur M. Corwin, Chicago; Charles D. Thomas, Peoria, Ill., and Hugh T. Patrick, Chicago.

Dr. Joseph W. Charles, St. Louis, read a paper on "Ocular Headaches." Discussed by Drs. William W. Pearson, Des Moines, Iowa; Oscar Wilkinson, Washington, D. C.; Frank Allport, Chicago, and Joseph W. Charles, St. Louis.

Wednesday, June 12—Afternoon

The section was called to order at 2:20 by the chairman, Dr. Greenfield Sluder, St. Louis.

Dr. Greenfield Sluder presented a new friction lock for a tonsil guillotine. This can be used without changing the position of the fingers or loosening the grip, and when the guillotine is shut it stays.

Dr. George W. Boot, Chicago, presented a safety pin extractor, in which the point of the pin can be drawn within a spiral.

The chairman then appointed the committee mentioned in Dr. Wendell C. Phillips' motion at the morning session, as follows: Drs. Thomas Hubbard, Toledo, Ohio; Chevalier Jackson, Philadelphia, and Hubert Arrowsmith, Brooklyn.

Dr. Wendell C. Phillips moved that this committee be approved by the section. Seconded and carried.

The paper of Dr. Harris P. Mosher, Lieutenant-Colonel, M. C., N. A., entitled "Informal Report on Activities of Section on Surgery of the Head of Surgeon-General's Office," was read.

Major Norval H. Pierce, Chicago, read a paper on "Otolaryngology in the Army Medical Service."

These two papers were discussed by Drs. Charles W. Richardson, Washington, D. C.; R. H. Fowler, New York; H. W. Loeb, St. Louis; John B. Potts, Omaha, and Norval H. Pierce, Chicago.

The chairman appointed Drs. Elmer L. Kenyon, Chicago; William B. Chamberlin, Cleveland, and Joseph A. Stucky, Lexington, Ky., a committee of three to draft suitable resolutions regarding the war work of the otolaryngologists and ophthalmologists.

The chairman appointed as the Nominating Committee Drs. George F. Cott, Buffalo; George F. Keiper, Lafayette, Ind., and Louis Ostrom, Jr., Rock Island, Ill.

Dr. J. Gordon Wilson, Chicago, read a paper on "Results of Concussion of High Explosive Shells on the Ear." Discussed by Drs. Thomas Hubbard, Toledo, Ohio; Roy W. Dunlap, Tulsa, Okla.; H. W. Loeb, St. Louis; Samuel G. Higgins, Milwaukee, and J. Gordon Wilson, Chicago.

Dr. Joseph A. Stucky, Lexington, Ky., read a paper on "Systemic Factors in the Treatment of Acute and Subacute Sinusitis." Discussed by Drs. George F. Keiper, Lafayette, Ind.; Frank R. Spencer, Boulder, Colo., and Joseph A. Stucky, Lexington, Ky.

The chairman then introduced Dr. Eugene R. Lewis of the Medical Reserve Laboratory, Field No. 1, Mineola, L. I., who gave a short talk on the work being done among the aviators.

Friday, June 14—Morning

The section was called to order at 9:15 by the secretary, Dr. L. W. Dean, who announced that Dr. Greenfield Sluder had been called home. Dr. George F. Cott, Buffalo, occupied the chair.

The following officers were elected: chairman, Dr. L. W. Dean, Iowa City, Iowa; vice chairman, Dr. Eugene R. Lewis, Mineola, L. I.; secretary, Dr. William B. Chamberlin, Cleveland; delegate, Dr. George F. Keiper, Lafayette, Ind.; alternate, Dr. Frank R. Spencer, Boulder, Colo.

The Committee on Chairman's Address then made its report, which on motion, seconded and carried, was adopted.

The report of the committee to draft resolutions regarding war work was then read and, on motion seconded and carried, was adopted.

The report of the Committee on Necrology was read by Dr. W. B. Chamberlin, Cleveland. But one name was reported this year—Dr. Ephraim Fletcher Ingals, Chicago. On motion, seconded and carried, the report was accepted.

Dr. Warren B. Davis, Philadelphia, read a paper on "Anatomy of the Nasal Accessory Sinuses in Infancy and Childhood." Discussed by Drs. George E. Shambaugh, Chicago; Joseph C. Beck, Chicago; H. A. Canfield, Bradford, Pa., and Warren B. Davis, Philadelphia.

Dr. Henry H. Martin, Savannah, Ga., read a paper on "Treatment of Neuralgia of the Fifth Nerve by Injection of the Gasserian Ganglion." Discussed by Drs. Hugh T. Patrick, Chicago; Joseph C. Beck, Chicago, and Henry H. Martin, Savannah, Ga.

Dr. J. Randolph Page, New York, read a paper on "Anatomy of the Lateral Sinus: Its Connections and Anomalies." Discussed by Drs. George E. Shambaugh, Chicago, and J. Randolph Page, New York.

Dr. Jacob Braun, New York, read a paper on "The Snaretome Operation for Enucleation of the Tonsil." Discussed by Drs. Frank R. Spencer, Boulder, Colo.; Louis Ostrom, Jr., Rock Island, Ill.; Leon A. Feinstein, St. Louis; Oliver Tydings, Chicago; H. H. Martin, Savannah, Ga.; James A. Watson, Minneapolis, and Jacob Braun, New York.

Dr. J. Leslie Davis, Philadelphia, read a paper on "Diseased Faucial Tonsils: Their Toxic, Infectious and Reflex Effects." Discussed by Dr. George F. Keiper, Lafayette, Ind.

Dr. Thomas W. Moore, Huntington, W. Va., read a paper on "The Present Status of the Operative Treatment of Chronic Frontal Sinusitis." Discussed by Drs. Frank R. Spencer, Boulder, Colo.; George E. Shambaugh, Chicago, and James J. Pattee, Pueblo, Colo.

Dr. Henry B. Lemere, Omaha, read a paper on "The Relation of the Movements of the Head and Eyes to Labyrinth Stimulation." Discussed by Drs. Joseph G. Parsons, Sioux Falls, S. D.; George W. Mackenzie, Philadelphia, and Henry B. Lemere, Omaha.

SECTION ON DISEASES OF CHILDREN

Wednesday, June 12—Morning

The meeting was called to order at 9:30 by the chairman, Dr. Laurence R. DeBuys, New Orleans.

Owing to the absence of Dr. T. C. McCleave, Oakland, Calif., delegate to the House of Delegates of the American Medical Association, the chairman appointed Dr. H. M. McClanahan, Omaha, to represent the section in the House of Delegates.

Dr. DeBuys read the chairman's address, entitled "Conservation of Child Life, a National Responsibility."

A motion was made by Dr. William Weston, Columbia, S. C., that the chairman appoint a committee of three to confer with the Surgeon-General's Office relative to the status of the pediatric men in this country.

Seconded and carried.

The chairman appointed the following committee: Dr. J. P. Sedgwick, Minneapolis, chairman; Dr. E. C. Fleischner, San Francisco, and William Weston, Columbia, S. C.

Dr. Paul Armand-De Lille, Paris, France, read a paper on "The Infant Mortality Campaign in France."

Dr. William Palmer Lucas, San Francisco, read a paper on "Medical Work Among the Civilian Population in France."

Dr. Grace L. Meigs, Washington, D. C., read a paper on "Children's Year Program for Child Conservation in War Time."

Drs. Julius P. Sedgwick and N. O. Pearce, Minneapolis, presented a paper on "A Report on Children in the War Zone," read by Dr. Pearce.

These papers were discussed by Drs. B. Raymond Hoobler, Detroit; Edgar J. Huenekens, Minneapolis; Lawrence T. Royster, Norfolk, Va.; Joseph I. Grover, Boston; Franklin N. Rogers, Manchester, N. H.; Louis H. Schwartz, New York; John A. Foote, Washington, D. C.; J. T. Christison, St. Paul; Langley Porter, San Francisco; C. F. Wahrer, Fort Madison, Iowa; Frances M. Hollingshead, Columbus, Ohio; Leroy A. Wilkes, Bridgeport, Conn.; E. C. Fleischner, San Francisco; J. P. Sedgwick, Minneapolis; Grace L. Meigs, Washington, D. C.; William Palmer Lucas, San Francisco, and Laurence R. DeBuys, New Orleans.

Wednesday, June 12—Afternoon

The meeting was called to order at 2:30 by the chairman.

Dr. Henry H. Yerington, San Francisco, read a paper on "Clinical Supervision of the Well Baby During Its First Year." Discussed by Drs. C. F. Wahrer, Fort Madison, Iowa, and Louis H. Schwartz, New York.

Dr. Henry J. Gerstenberger, Cleveland, read a paper on "A Report of Three Years' Clinical Experience with the Feeding of S. A. M. (Synthetic Milk Adapted)." Discussed by Drs. C. F. Wahrer, Fort Madison, Iowa; John Zahorsky, St. Louis; Isaac A. Abt, Chicago; Louis H. Schwartz, New York, and Henry J. Gerstenberger, Cleveland.

Dr. Jay I. Durand, Seattle, read a paper on "Digestion of Fat by Gastric and Intestinal Ferment." No discussion.

Dr. Jules M. Brady, St. Louis, read a paper on "Lumbar Puncture in Meningeal Hemorrhage." Discussed by Drs. Frank C. Neff, Kansas City, Mo.; John A. Foote, Washington, D. C.; Lawrence T. Royster, Norfolk, Va., and Jules M. Brady, St. Louis.

Dr. Albert H. Beifield, Iowa City, Iowa, read a paper on "The Significance of Infection of the Accessory Sinuses of the Nose of Infants and Children." Discussed by Drs. R. N. Andrews, Mankato, Minn.; Henry J. Gerstenberger, Cleveland; John Zahorsky, St. Louis; Albert H. Beifield, Iowa City, Iowa, and Paul Armand-De Lille, Paris, France.

Dr. Langley Porter, San Francisco, read a paper on "Chorea." Discussed by Drs. Henry J. Gerstenberger, Cleveland; Henry W. Cheney, Chicago; J. T. Christison, St. Paul, and Langley Porter, San Francisco.

The committee appointed to confer with the Surgeon-Generals made its report.

Dr. E. C. Fleischner presented a resolution to be presented to the War Council as follows:

> *Resolved*, That the War Council of the American Red Cross be asked to appropriate $100,000 for the purpose of better child welfare work, assisting existing organizations working in child welfare work and organizing this work, when approved by the Medical Advisory Board of the American Red Cross. This sum to be expended under the direction of the said committee.

Referred to the House of Delegates with the unanimous approval of those attending the meeting. (See proceedings of the House of Delegates.)

Friday, June 14—Morning

The meeting was called to order at 9:25 by the chairman.

The following officers were elected: chairman, Dr. Frank P. Gengenbach, Denver; vice chairman, Dr. Jay I. Durand, Seattle; secretary, Dr. E. C. Fleischner, San Francisco; delegate, Dr. Isaac A. Abt, Chicago; alternate, Dr. Laurence R. DeBuys, New Orleans.

Dr. Rood Taylor, Rochester, Minn.. read a paper on "Treatment of Prematurity." Discussed by Drs. John Zahorsky, St. Louis; Isaac A. Abt, Chicago; Lawrence T. Royster, Norfolk, Va.; Frank C. Neff, Kansas City, Mo.; Jane Merrill Ketcham, Indianapolis; Jules M. Brady, St. Louis; Jay I. Durand, Seattle, and E. J. Huenekens, Minneapolis.

Drs. Harry Lowenburg and A. I. Rubenstone, Philadelphia, presented a paper on "Hemophilia," read by Dr. Lowenburg. Discussed by Drs. C. F. Wahrer, Fort Madison, Iowa; Abraham Jacobi, New York; Rood Taylor, Rochester, Minn., and William Weston, Columbia, S. C.

Dr. Harry M. McClanahan, Omaha, read a paper on "Intestinal Parasites in Children." Discussed by Drs. William Weston, Columbia, S. C.; C. F. Wahrer, Fort Madison, Iowa; A. H. Beifield, Iowa City, Iowa, and Harry M. McClanahan, Omaha.

Dr. Louis Fischer, New York, read a paper on "The Superior Longitudinal Sinus in Infants; Its Value in Transfusion, and for Rapid Medication; Its Adaptability in Procuring Blood for Diagnosis." Discussed by Dr. Harry Lowenburg, Philadelphia.

Dr. William Weston, Columbia, S. C., read a paper on "Purpura Abdominalis in Early Life." Discussed by Drs. John A. Foote, Washington, D. C.; Rood Taylor, Rochester, Minn.; Isaac A. Abt, Chicago; M. L. Turner, Des Moines, Iowa, and William Weston, Columbia, S. C.

Dr. Joseph I. Grover, Boston, read a paper on "Etiology and Treatment of Enuresis." Discussed by Drs. Harry Lowenburg, Philadelphia; H. M. McClanahan, Omaha; M. L. Turner, Des Moines, Iowa; O. W. Rowe, Duluth, Minn.; Franklin N. Rogers, Manchester, N. H., and Joseph I. Grover, Boston.

Dr. Lawrence T. Royster, Norfolk, Va., on behalf of the Executive Committee, presented the name of Dr. Paul Armand-De Lille, Paris, France, for recommendation by this section to honorary membership in the American Medical Association. Unanimously endorsed by the section. (Not transmitted to the House of Delegates in time for action at the 1918 session.)

Friday, June 14—Afternoon

The meeting was called to order at 2:20 by the chairman.

Dr. Edgar J. Huenekens, Minneapolis, read a paper on "Further Report on Pertussis Vaccine Controlled by the Complement Fixation Test." Discussed by Drs. J. T. Christison, St. Paul; Jay I. Durand, Seattle; E. C. Fleischner, San Francisco; Frank C. Neff, Kansas City, Mo., and Edgar J. Huenekens, Minneapolis.

Drs. Emanuel C. Fleischner and K. F. Meyer, San Francisco, presented a paper on "Cutaneous Hypersensitiveness as an Evidence of Infection, and Its Bearing on the Pathogenicity for Infants of the *Bacillus Abortus-Bovinus.*" No discussion.

Dr. John Zahorsky, St. Louis, read a paper on "The Remote Results of Tonsillectomy in the Young." Discussed by Drs. Harry Lowenburg, Philadelphia; Isaac A. Abt, Chicago; E. C. Fleischner, San Francisco; J. P. Sedgwick, Minneapolis, and John Zahorsky, St. Louis.

Dr. Charles E. Hansel, South Bend, Ind., read a paper on "Group Medicine and Pediatrics." Discussed by Drs. R. N. Andrews, Mankato, Minn.; Franklin N. Rogers, Manchester, N. H.; Joseph I. Grover, Boston; O. W. Rowe, Duluth, Minn., and Charles E. Hansel, South Bend, Ind.

Dr. Albert J. Bell, Cincinnati, read a paper on "The Diagnostic Study of Conditions in the Throat Producing Dyspnea." No discussion.

Moved and seconded that Dr. Zahorsky be granted permission to withdraw his paper. Passed.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

Wednesday, June 12—Morning

The Section was called to order at 9:15 by the chairman, Dr. Arthur D. Hirschfelder, Minneapolis. The chairman appointed as the Executive Committee Drs. J. F. Anderson, New Brunswick, N. J.; Torald Sollmann, Cleveland, and C. W. Edwards, Ann Arbor, Mich. The chairman appointed as the nominating committee Drs. Torald Sollmann, Cleveland; Cary Eggleston, New York, and W. A. Puckner, Chicago.

to Secretary Hamilton, who has handled the work connected with his office during the past three years. Dr. Albert E. Sterne, Indianapolis, seconded the motion, and it was carried by rising vote.

Dr. William A. Jones, Minneapolis, said: In view of the work contributed by the medical profession, both at its annual meetings and through the efforts of the men directly connected with war activities, I move that the Transportation Committee of the American Medical Association be requested to secure reduced railroad rates to members of the Association, and particularly to those who live at a distance, and that this motion be transmitted to the secretary of the American Medical Association through the secretary of this section.

Dr. Lesser Kauffman, Buffalo, seconded this motion, which was unanimously carried.

With reference to the paper entitled "A Psychiatric Contribution to the Problem of Prison Reform," by Dr. Herman M. Adler, Chicago, it was moved by Dr. C. Eugene Riggs, St. Paul, that because of the lateness of the hour, and in view of the fact that the author was present, the paper be read by title and passed. Seconded and carried.

SECTION ON DERMATOLOGY

Wednesday, June 12—Morning

The meeting was called to order at 9:30 by the chairman, Dr. Henry H. Hazen, Washington, D. C.

The chairman appointed Dr. Ernest D. Chipman, San Francisco, to serve on the Executive Committee in the place of Dr. Howard Fox, New York, who was in active service with the Medical Reserve Corps.

Dr. Henry H. Hazen, Washington, D. C., read the chairman's address, entitled "The Duties of the Dermatologist."

The following papers were read as a symposium on "Skin Tuberculosis."

Dr. Fred Wise, New York, read the paper submitted by Dr. Sigmund S. Pollitzer, New York, on "Cutaneous Tuberculosis: a Survey."

Dr. Fred Wise, New York: "Miliary Tuberculosis of the Skin, Lichen Scrofulosum and Papulonecrotic Tuberculids."

Drs. Samuel E. Sweitzer and Henry E. Michelsen, Minneapolis: "Sarcoids and Erythema Induratum of Bazin."

Drs. John E. Lane, New Haven, Conn., and Max Scheer, New York: "Dermatoses Possibly Related to Tuberculosis."

These four papers were discussed by Drs. Joseph Zeisler, Chicago; Richard L. Sutton, Kansas City, Mo.; John A. Fordyce, New York; J. H. Stokes, Rochester, Minn.; Frederick G. Harris, Chicago; Augustus Ravogli, Cincinnati; Walter J. Heimann, New York; Everett S. Lain, Oklahoma City; Ernest D. Chipman, San Francisco; Moses Scholtz, Cincinnati; Fred Wise, New York; John E. Lane, New Haven, Conn., and Henry E. Michelsen, Minneapolis.

Dr. Meyer L. Heidingsfeld, Cincinnati, read a paper on "The Too Intensive Arsphenamin (Salvarsan) Treatment of Syphilis." Discussed by Drs. John H. Fordyce, New York; Budd C. Corbus, Chicago; J. H. McBride, Kansas City, Mo.; John E. Lane, New Haven, Conn.; Richard L. Sutton, Kansas City, Mo.; King Smith, Toronto; E. J. Trowe, Toronto; Fred Wise, New York; Joseph Zeisler, Chicago; Bernard Erdman, Indianapolis; Arthur W. Stillians, Chicago; Walter J. Heimann, New York; Henry R. Varney, Detroit, and Meyer L. Heidingsfeld, Cincinnati.

The chairman appointed the following nominating committee: Drs. John E. Lane, New Haven, Conn., Henry R. Varney, Detroit, and J. B. Shelmire, Dallas, Texas.

Wednesday, June 12—Afternoon

The meeting was called to order at 2:30 by the chairman, Dr. Henry H. Hazen, Washington, D. C.

The following papers were read as a symposium on "Syphilis in Its Economic Aspects."

Drs. Wade H. Brown and Louise Pearce, New York: "Experimental Therapy in Syphilis."

Dr. William Allen Pusey, Chicago: "The Handling of the Venereal Disease Problem in the Army at the Present Time."

Dr. John A. Fordyce, New York: "The Value of Early Diagnosis and Immediate Treatment in Preventing Neurosyphilis; Its Economic Aspects."

Dr. Harry G. Irvine, Minneapolis: "Syphilis and Venereal Diseases as a Public Health Problem."

These four papers were discussed by Drs. John E. Lane, New Haven, Conn.; John H. Stokes, Rochester, Minn.; King Smith, Toronto; Abram Schuyler Clark, New York; Fred Wise, New York; James Herbert Mitchell, Chicago; Loyd Thompson, Hot Springs, Ark.; Moses Scholtz, Cincinnati; A. H. Martin, Hot Springs, Ark.; Frank Wright, Minneapolis; Walter J. Heimann, New York; Wade H. Brown, New York; William Allen Pusey, Chicago; John H. Fordyce, New York, and Harry G. Irvine, Minneapolis.

Friday, June 14—Morning

The meeting was called to order at 9:30 by the chairman, Dr. Henry H. Hazen, Washington, D. C.

The following officers were elected: chairman, Dr. Otto H. Foerster, Milwaukee; vice chairman, Dr. David Lieberthal, Chicago; secretary, Dr. Walter J. Heimann, New York; delegate, Dr. George MacKee, New York; alternate, Dr. Fred Wise, New York.

The following papers were read as a symposium on "Bullous Dermatoses."

Dr. Walter J. Heimann, New York: "Pemphigus: a Clinical Study."

Dr. David Lieberthal, Chicago: "Toxic and Bullous Drug Eruptions and the Bullous Erythemas."

These two papers were discussed by Drs. Henry H. Hazen, Washington, D. C.; Richard L. Sutton, Kansas City, Mo.; Augustus Ravogli, Cincinnati; John A. Fordyce, New York; Michael L. Ravitch, Louisville, Ky.; Harry G. Irvine, Minneapolis; Jesse B. Shelmire, Dallas, Texas; Philip Frank Shaffner, Chicago; Samuel E. Sweitzer, Minneapolis; Everett S. Lain, Oklahoma City; Moses Scholtz, Cincinnati; Joseph Zeisler, Chicago; Walter J. Heimann, New York, and David Lieberthal, Chicago.

Dr. Lloyd W. Ketron, Baltimore, read a paper on "Unusual Forms of Epitheliomas of the Skin." Discussed by Drs. Henry H. Hazen, Washington, D. C.; Frederick G. Harris, Chicago; Richard L. Sutton, Kansas City, Mo.; Augustus Ravogli, Cincinnati; L. B. Mount, Albany, N. Y.; K. A. Zurawski, Chicago, and Lloyd W. Ketron, Baltimore.

Dr. Michael L. Ravitch, Louisville, Ky., read a paper on "Further Observations Concerning Dermatoses Attributed to Focal Infections."

Dr. Ernest Dwight Chipman, San Francisco, read a paper on "The Etiology of Lichen Planus."

These two papers were discussed by Drs. Richard L. Sutton, Kansas City, Mo.; King Smith, Toronto; John E. Lane, New Haven, Conn.; Frederick G. Harris, Chicago; Moses Scholtz, Cincinnati; Everett S. Lain, Oklahoma City; David Lieberthal, Chicago; J. S. Eisenstaedt, Chicago; K. A. Zurawski, Chicago; J. H. Stokes, Rocheser, Minn.; Henry H. Hazen, Washington, D. C.; Michael L. Ravitch, Louisville, Ky., and Ernest Dwight Chipman, San Francisco.

Friday, June 14—Afternoon

The meeting was called to order at 2:30 by the chairman, Dr. Henry H. Hazen, Washington, D. C.

Dr. Edward H. Reede, Washington, D. C., read a paper on "The Rôle of the Vegetative Nervous System in Certain Diseases of the Skin." Discussed by Drs. Ernest L. McEwen, Chicago; William Allen Pusey, Chicago; Richard L. Sutton, Kansas City, Mo.; Henry J. Gerstenberger, Cleveland; J. H. Stokes, Rochester, Minn.; Loretta Joy Cummins, Boston; Augustus Ravogli, Cincinnati; B. W. Eppler, Kalamazoo, Mich.; Henry H. Hazen, Washington, D. C.; Edward H. Reede, Washington, D. C.

Drs. Richard L. Sutton, Kansas City, Mo., and Frank E. Simpson, Chicago, presented a paper on "Retention Cysts of the Mucous Membrane of the Lip." Discussed by Drs. William Allen Pusey, Chicago, and Jesse B. Shelmire, Dallas, Texas.

Drs. Jesse B. Shelmire, and James H. Black, Dallas, Texas, presented a paper on "Adenoma Sebaceum: Report of Five Cases in One Family." Discussed by Drs. James Herbert Mitchell, Chicago; Richard L. Sutton, Kansas City, Mo., and Jesse B. Shelmire, Dallas, Texas.

Dr. Everett S. Lain, Oklahoma City, read a paper on "Dermatitis Lycopersicum Esculentum." Discussed by Drs. Arthur W. Stillians, Chicago; J. Frank Waugh, Chicago; Ernest L. McEwen, Chicago; Frederick G. Harris, Chicago; David Lieberthal, Chicago; Richard L. Sutton, Kansas City, Mo.; Robert G. Washburn, Milwaukee; Harold N. Cole, Cleveland; James Herbert Mitchell, Chicago; John E. Lane, New Haven, Conn.; William Allen Pusey, Chicago, and Everett S. Lain, Oklahoma City.

Dr. J. S. Eisenstaedt, Chicago, read a paper on "A Case of Sporotrichosis Resembling Tuberculosis of the Skin." Discussed by Drs. Frederick G. Harris, Chicago; K. A. Zurawski, Chicago; Richard L. Sutton, Kansas City, Mo.; Augustus Ravogli, Cincinnati, and J. S. Eisenstaedt, Chicago.

The newly elected officers were inducted into office and made brief and appropriate speeches of acceptance.

SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH

Wednesday, June 12—Morning

The meeting was called to order at 9:30 by the chairman, Dr. W. S. Rankin, Raleigh, N. C.

The following papers were read as a *symposium on* "Rural Sanitation":

Dr. W. S. Rankin, Raleigh, N. C.: "Coordinate Responsibility of Nation, State and County in Rural Sanitation." Discussed by Drs. J. W. Schereschewsky, Washington, D. C.; H. B. Hemenway, Springfield, Ill.; Otto P. Geier, Cincinnati; John N. Hurty, Indianapolis; James A. Hayne, Columbia, S. C., and W. S. Rankin, Raleigh, N. C.

Dr. John N. Hurty, Indianapolis: "State Responsibility and Aims in County Health Work." Discussed by Dr. René Sand of the Belgian Mission, on Industrial Management, Mr. F. L. Hoffman, Newark, N. J., and Dr. James A. Hayne, Columbia, S. C.

Dr. Otto P. Geier, Cincinnati, by request, made a statement on "Industrial Hygiene." Discussed by Dr. W. A. Evans, Chicago; Dr. J. W. Schereschewsky, Washington, D. C.; Major Edouard Rist, of the French Mission; Dr. William H. Welch, Lieutenant-Colonel, M. C., N. A.; Dr. Victor C. Vaughan, Colonel, M. C., N. A., and Dr. Oscar Dowling, Shreveport, La.

The following nominating committee was appointed: Dr. E. R. Kelley, Boston; Dr. Otto P. Geier, Cincinnati, and Dr. Oscar Dowling, Shreveport.

Dr. S. W. Welch, Montgomery, Ala., presented a resolution with reference to maintaining the working efficiency of the state boards of health of the several states.

The resolution was adopted.

Wednesday, June 12—Afternoon

A joint meeting was held with the Section on Orthopedic Surgery. For the proceedings, see the minutes of that section.

Friday, June 14—Morning

The chairman, Dr. W. S. Rankin, Raleigh, N. C., called the meeting to order at 9:20 o'clock.

The following officers were elected: chairman, Dr. C. St. Clair Drake, Springfield, Ill.; vice chairman, Dr. J. W. Schereschewsky, Washington, D. C.; secretary, Dr. Donald B. Lowe, Akron, Ohio; delegate, Dr. W. S. Rankin, Raleigh, N. C.

The chairman then introduced Dr. Victor C. Vaughan, Colonel, M. C., N. A., as the presiding officer, owing to the military nature of the program.

The following papers were read as a symposium on "Military Hygiene and Preventive Medicine":

Dr. Rufus I. Cole, New York: "Prevention of Pneumonia."

Dr. Simon Flexner, New York: "Control of Meningitis."

Dr. Martha Wollstein, New York: "Mumps."

These three papers were discussed by Drs. Victor C. Vaughan, Ann Arbor, Mich.; Frederick F. Russell, Washington, D. C.; P. F. Armand-De Lille, Boulogne, France; William C. Rucker, Washington, D. C.; H. Gideon Wells, Chicago; H. B. Hemenway, Springfield, Ill.; Simon Flexner, New York; Martha Wollstein, New York, and Rufus I. Cole, New York.

Dr. Wilbur A. Sawyer, Berkeley, Calif., read a paper on "Venereal Disease Control in the Army." Discussed by Drs. Victor C. Vaughan, Ann Arbor, Mich.; P. S. Schenk, Norfolk, Va.; J. O. Cobb, Colonel, U. S. P. H. S., and C. St. Clair Drake, Springfield, Ill.

Dr. C. F. Gelston, engaged for a year or more in assembling and helping to take care of the civilian people who have been returned from Germany to France, made a few remarks.

SECTION ON GENITO-URINARY DISEASES

Wednesday, June 12—Morning

The meeting was called to order by the chairman of the Executive Committee, Dr. Granville MacGowan, Los Angeles, at about 9 o'clock, who stated that because of the absence of the chairman of the section in France, and the death of the vice chairman, the conduct of the meeting developed on the Executive Committee, through its chairman, and that there would be no address by the chairman.

Dr. E. Otis Smith, Cincinnati, read a paper on "Anatomic and Pathologic Study of the Posterior Urethra."

Dr. Ernest M. Watson, Buffalo, read a paper on "The Human Vesicles at Birth, with Observations in Their Fetal Development."

Dr. Granville MacGowan, Los Angeles, read a paper on "Why Trained Urologists Should Be Employed to Treat Disease Conditions of the Posterior Urethra and the Bladder Neck."

These three papers were discussed by Drs. Charles M. Harpster, Toledo, Ohio; William T. Belfield, Chicago; Bransford Lewis, St. Louis; V. G. Vecki, San Francisco; John R. Caulk St. Louis; A. L. Wolbarst, New York; A. E. Goldstein, Baltimore, and V. D. Lespinasse, Chicago.

Drs. Loyd Thompson, Hot Springs, Ark., and Jacob Bolasny, Detroit, presented a paper on "Venereal Disease in the Thirty-Ninth Division." Discussed by Drs. F. M. McCallum Kansas City; V. G. Vecki, San Francisco; A. L. Wolbarst, New York; John R. Caulk, St. Louis; A. E. Goldstein, Baltimore; W. J. Wallace, Oklahoma City; A. E. Mowry, Chicago; W. G. A. Schulte, Salt Lake City; William C. Quinby, Boston; E. H. Martin, Hot Springs, Ark.; Charles M. Harpster, Toledo, Ohio; Lawrence T. Price, Richmond, Va., and Granville MacGowan, Los Angeles.

Wednesday, June 12—Afternoon

Dr. Arthur L. Chute, Boston, read a paper on "Some Cases of Retention of Urine Associated with Defects of the Sacrum, Probably Spina Bifida Occulta." Discussed by Drs. J. A. Gardner, Buffalo; William F. Braasch, Rochester, Minn.; Leland Boogher; St. Louis; H. L. Kretschmer, Chicago; J. Dellinger Barney, Boston, and J. P. O'Neil, Chicago.

The chairman recounted briefly the circumstances attending the death of Dr. Martin Krotoszyner of San Francisco, and appointed as a special committee to prepare suitable obituary resolutions Drs. A. L. Wolbarst, New York; Rufus L. Rigdon, San Francisco, and J. L. Boogher, St. Louis.

The chairman announced that Dr. Arthur L. Chute, Boston, had been selected by the Executive Committee to fill the place of Dr. Hugh Cabot, Boston, on the Executive Committee during this meeting.

Dr. Henry G. Bugbee, New York, read a paper on "Renal Complications of Pregnancy from the Standpoint of the Urologist." Discussed by Drs. Herman L. Kretschmer, Chicago; John R. Caulk, St. Louis; V. D. Lespinasse, Chicago, and A. E. Goldstein, Baltimore.

A paper by Dr. Frank Hinman, San Francisco, was read on "Experimental Hydronephrosis: Repair Following Ureterocystoneostomy in White Rats with Complete Ureteral Obstruction." Discussed by Drs. J. Dellinger Barney, Boston; James A. Gardner, Buffalo; Henry G. Bugbee, New York, and V. D. Lespinasse, Chicago.

Dr. Anders Peterson, Rochester, Minn., read a paper on "Effect on the Kidney and Ureter Following Transplantation into the Bladder." Discussed by Drs. Granville MacGowan, Los Angeles; V. D. Lespinasse, Chicago; Arthur L. Chute, Boston; Charles M. McKenna, Chicago; Bernhard Erdman, Indianapolis, and F. C. Herrick, Cleveland.

Dr. Robert H. Herbst, Chicago, read a paper on "Acquired Stricture of the Lower End of the Ureter." Discussed by V. D. Lespinasse, Chicago; John R. Caulk, St. Louis; William M. Spitzer, Denver; Gustav Kolischer, Chicago; Bernhard Erdman, Indianapolis; J. Dellinger Barney, Boston; Arthur L. Chute, Boston, and William F. Braasch, Rochester, Minn.

Friday, June 14—Morning

Drs. V. G. Vecki, San Francisco; William C. Quinby, Boston, and C. M. Harpster, Toledo, Ohio, were appointed as a nominating committee.

The following officers were elected: chairman, William F. Braasch, Rochester, Minn.; vice chairman, R. L. Rigdon, San Francisco; secretary, E. O. Smith, Cincinnati; delegate, Granville MacGowan, Los Angeles; alternate, H. G. Hamer, Indianapolis.

The address of the chairman, Dr. Edward L. Keyes, Jr., was read.

Dr. Bransford Lewis, St. Louis, read a paper on "New Instruments in Operative Cystoscopy." Discussed by Drs. William F. Braasch, Rochester, Minn., and H. L. Kretschmer, Chicago.

Dr. Oswald S. Lowsley, New York, read a paper on "Surgery and Surgical Pathology of the Human Prostate Gland." Discussed by Drs. H. L. Kretschmer, Chicago; Arthur L. Chute, Boston; V. D. Lespinasse, Chicago; W. G. A. Schulte, Salt Lake City; Bransford Lewis, St. Louis; Gustav Kolischer, Chicago; B. L. Guyatt, Binbrooke, Ont.; Granville MacGowan, Los Angeles; L. E. Schmidt, Chicago, and A. E. Goldstein, Baltimore.

Dr. James A. Gardner, Buffalo, read a paper on "The Silent Prostate." Discussed by Drs. H. L. Kretschmer, Chicago; James B. Cross, Buffalo; J. Dellinger Barney, Boston; Bernhard Erdman, Indianapolis; W. G. Schulte, Salt Lake City; Oswald S. Lowsley, New York; William C. Quinby, Boston; Gustav Kolischer, Chicago; L. E. Schmidt, Chicago; V. D. Lespinasse, Chicago, and C. M. Harpster, Toledo, Ohio.

The committee named to draft resolutions on the death of the vice chairman, Dr. Martin Krotoszyner, San Francisco, reported the following:

Whereas, Dr. Martin Krotoszyner was for many years one of the leading urologists of the Pacific Coast; and

Whereas, He stood high in the affections and respect of his confrères, both at home and throughout the nation, and was recognized as a man of honor, a friend who was loyal, a physician of scientific mind and a co-member of our society who was always enthusiastically ready to further its interests, and

Whereas, On the afternoon of April 20, 1918, while engaged in his office consultations he was wantonly shot to death by a man of disordered mind whose ills he had attempted to heal; and

Whereas, In his death his family lost a loving husband and father, his city was deprived of a public spirited citizen, and the medical profession lost one of its most sincere and untiring members; and

Whereas, Dr. Krotoszyner had been actively interested in the Section on Genito-Urinary Diseases of the American Medical Association since the organization of that Section, and at its meeting one year ago was elected to the office of vice chairman; therefore, be it

Resolved, That we, Fellows of the A. M. A., registered in this section hereby express our feelings of sincere sorrow at his untimely taking away and our sense of loss in his absence from our meeting, and his cooperation in our councils; and

Resolved, That we extend to his wife and family our deepest sympathy in their bereavement, and we assure them that his memory will be cherished by this section as one who stood for the highest and best ideals in medicine; and be it further

Resolved, That these resolutions be spread on the minutes of the section and become a part of its records, and that a copy be forwarded to his family.

The foregoing resolutions were adopted by rising and unanimous vote.

Friday, June 14—Afternoon

Dr. William C. Quinby, Boston, read a paper on "Treatment of Genital Tuberculosis in the Male." Discussed by Drs. J. Dellinger Barney, Boston; J. P. O'Neil, Chicago; James A. Gardner, Buffalo, and Oswald Lowsley, New York.

Dr. J. Dellinger Barney, Boston, read a paper on "Colon Bacillus Infection of the Urinary Tract."

Dr. Louis E. Schmidt, Chicago, read a paper on "The Significance of Bacteriuria."

These two papers were discussed by Drs. H. L. Kretschmer, Chicago; Granville MacGowan, Los Angeles; Oswald S. Lowsley, New York; Bransford Lewis, St. Louis; C. M. McKenna, Chicago, and C. W. Bethune, Buffalo.

Dr. Louis E. Schmidt, Chicago, moved the adoption of the following: That the membership of this section unanimously request that its name be changed to that of the Section on Urology, its scope to be the same as heretofore.

The motion carried by unanimous vote. [Not transmitted to the House of Delegates.]

Dr. Albert E. Goldstein, Baltimore, read a paper on "The Diagnostic and Prognostic Value of Blood Urea in Urology." No discussion.

SECTION ON ORTHOPEDIC SURGERY

Wednesday, June 12—Morning

The section was called to order at 9:05 by the chairman, Dr. Albert H. Freiberg, Cincinnati. Dr. Freiberg made some announcements and appointed, as vice president pro tem., Dr. J. D. Griffith, Kansas City; and as members of the Executive Committee pro tem., Drs. Frank E. Peckham, Providence, R. I.; Arthur Steindler, Iowa City, Iowa, and A. R. Colvin, St. Paul.

Dr. Leo Mayer, New York, read a paper on "Tendon Operation Technic." Discussed by Drs. Arthur Steindler, Iowa City, Iowa; E. H. Smith, San Francisco; C. M. Jacobs, Chicago; M. A. Bernstein, Kenosha, Wis., and Leo Mayer, New York.

Dr. Walter G. Stern, Cleveland, read a paper by himself and Dr. M. E. Blahd, Cleveland, on "Cerebral Spastic Paraplegia." Discussed by Drs. George B. Packard, Denver; E. H. Smith, San Francisco; John Ridlon, Chicago, and Walter G. Stern, Cleveland.

Dr. Frank E. Peckham, Providence, R. I., read a paper on "A Further Report of the Operation for Stabilizing the Foot and Ankle in Poliomyelitis." Discussed by Drs. Walter G. Stern, Cleveland, and Frank E. Packham, Providence.

Dr. Melvin S. Henderson, Rochester, Minn., read a paper on "Loose Bodies in the Elbow Joint." Discussed by Drs. W. C. Campbell, Memphis, Tenn.; A. R. Colvin, St. Paul; A. H. Freiberg, Cincinnati; Arthur Steindler, Iowa City, Iowa; Leo Mayer, New York; C. A. Parker, Chicago; J. D. Griffith, Kansas City, Mo., and Melvin S. Henderson, Rochester, Minn.

Dr. Arthur Steindler, Iowa City, Iowa, read a paper on "Orthopedic Operations on the Hand." Discussed by Drs. John L. Porter, Chicago; J. P. Lord, Omaha; Melvin S. Henderson, Rochester, Minn.; C. M. Jacobs, Chicago, and Arthur Steindler, Iowa City, Iowa.

Dr. W. Barnett Owen, Louisville, Ky., read a paper on "Efficient Support for Sacro-Iliac Relaxation." Discussed by Drs. F. J. Gaenslen, Milwaukee; C. A. Parker, Chicago; J. P. Lord, Omaha; John L. Porter, Chicago; E. H. Smith, San Francisco, and W. Barnett Owen, Louisville, Ky.

Wednesday, June 12—Afternoon

A joint meeting was held with the Section on Preventive Medicine and Public Health.

The meeting was called to order at 2:10 by Dr. A. H. Freiberg, Cincinnati, chairman of the Section on Orthopedic Surgery. Dr. Freiberg read an announcement about draft board managers, and then surrendered the Chair to Dr. J. D. Griffith, Kansas City, Mo.

Dr. A. H. Freiberg, Cincinnati, read the chairman's address, entitled, "Military and Industrial Orthopedic Surgery."

Dr. Charles G. Farnum, Peoria, Ill., read a paper on "Modern Industrial Medicine and Surgery."

Dr. Clarence D. Selby, Toledo, Ohio, read a paper on "Conserving Industrial Man Power."

These two papers were discussed by Drs. J. W. Schereschewsky, Washington, D. C.; Charles G. Farnum, Peoria, Ill., and Clarence D. Selby, Toledo, Ohio.

Dr. Francis D. Patterson, Harrisburg, Pa., read a paper on "Reconstruction Work in Industrial and Military Life." Discussed by Drs. C. G. Farnum, Peoria, Ill.; O. P. Geier, Cincinnati; J. D. Griffith, Kansas City, Mo.; W. G. Stern, Cleveland; E. P. S. Miller, Chicago, and F. D. Patterson, Harrisburg, Pa.

Mr. Charles S. Andrus, Chicago, Ill., read a paper on "Responsibility of the Industrial Board and the Influence of the Medical Examiner." Discussed by Dr. Wilmer Krusen, Philadelphia, and Mr. C. S. Andrus, Chicago.

Friday, June 14—Morning

The meeting was called to order at 9:05 by the chairman, Dr. A. H. Freiberg, Cincinnati.

The following officers were elected: chairman, Dr. Emil S. Geist, Minneapolis; vice chairman, Dr. Benjamin P. Farrell, New York; Executive Committee, Dr. Russell A. Hibbs, New York, chairman; Dr. A. H. Freiberg, Cincinnati, and Dr. E. W. Ryerson, Chicago; delegate, Dr. John Ridlon, Chicago. The secretary, Dr. H. B. Thomas, Chicago, retains his office for two more years.

A letter from Col. Sir Robert Jones of London was read, and a motion was carried directing the secretary to write to Colonel Jones expressing appreciation and regard.

The executive session adjourned at 9:15, and the scientific program was resumed.

Dr. Robert B. Cofield, Cincinnati, read a paper on "Disinfection of the Knee Joint." Discussed by Drs. C. A. Parker, Chicago; J. P. Lord, Omaha; A. H. Freiberg, Cincinnati, and Robert B. Cofield, Cincinnati.

Dr. Leo Mayer, New York, showed the slides belonging to his paper on "Tendon Operation Technic," which was read on Wednesday morning. Discussed by Drs. A. H. Freiberg, Cincinnati, and Leo Mayer, New York.

Dr. Russell A. Hibbs, New York, presented a paper on "Final Report of Operations for Pott's Disease." Discussed by Drs. C. M. Jacobs, Chicago; W. C. Campbell, Memphis, Tenn.; F. J. Gaenslen, Milwaukee; H. B. Thomas, Chicago; Benjamin P. Farrell, New York, and R. A. Hibbs, New York.

Dr. David Silver, Pittsburgh, read a paper on "Problem of the Artificial Arm." Discussed by Drs. John Ridlon, Chicago; J. P. Lord, Omaha; Arthur Steindler, Iowa City, Iowa; Leo Mayer, New York; S. C. Baldwin, Salt Lake City, and David Silver, Pittsburgh.

Dr. Charles R. McClure, Portland, Ore., read a paper on "Isolated Disease of the Scaphoid." Discussed by Drs. W. C. Campbell, Memphis; S. C. Baldwin, Salt Lake City, and Charles R. McClure, Portland, Ore.

Dr. Robert Emmett Farr, Minneapolis, read a paper on "Illustrations and Demonstration of Bone-Holding Forceps." No discussion.

The chairman appointed Drs. J. P. Lord, Omaha, and R. B. Cofield, Cincinnati, as members of the executive committee to act in the places of Drs. A. R. Colvin and Frank E. Peckham.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

Wednesday, June 12—Morning

The meeting was called to order at 9 o'clock by the chairman, Dr. Anthony Bassler, New York.

Dr. Anthony Bassler, New York, read the chairman's address.

Dr. Charles D. Aaron, Detroit, read a paper on "A Simplified Method of Aspirating Gastric Contents in Hypersensitive Patients." Discussed by Drs. M. H. Mack, Chicago; J. M. Rector, Columbus, Ohio, and J. Russell Verbrycke, Jr., Washington, D. C.

Dr. William M. Beach, Pittsburgh, read a paper on "The Subnormal Colon." Discussed by Drs. D. H. Murray, Syracuse, N. Y.; E. L. Eggleston, Battle Creek, Mich.; William H. Stauffer, St. Louis, and Nathan Rosewater, Cleveland.

Dr. Dwight Henderson Murray, Syracuse, N. Y., read a paper on "A Résumé of Eight Years' Original Research Work in the Etiology and Treatment of Pruritus Ani." Discussed by Drs. J. M. Frick, Toledo, Ohio; James A. Duncan, Toledo, Ohio; Thomas Charles Martin, Washington, D. C., and Anthony Bassler, New York.

Dr. Sidney K. Simon, New Orleans, read a paper on "The Comparative Value of Crude Ipecac and Its Alkaloids in the Treatment of Amebiasis." Discussed by Drs. Frank Smithies, Chicago; Hugo A. Freund, Detroit, and Horace W. Soper, St. Louis.

The paper of Dr. Max Einhorn, New York, on "The Importance of Detailed Examination of Drafted Men with Regard to Their Ability to Be Soldiers," was read. No discussion.

Drs. Dwight Henderson Murray, Syracuse, N. Y., William H. Stauffer, St. Louis, and William Van Valzah Hayes, New York, were appointed by the chair as a nominating committee.

Wednesday, June 12—Afternoon

The meeting was called to order at 2 o'clock by the chairman.

The following officers were elected: chairman, Dr. William M. Beach, Pittsburgh; vice chairman, Dr. Frank Smithies, Chicago; secretary, Dr. Horace W. Soper, St. Louis; delegate, Dr. Willian Van Valzah Hayes, New York; alternate, Dr. T. Chittenden Hill, Boston; executive committee, Drs. Charles G. Stockton, Buffalo; Dwight H. Murray, Syracuse, N. Y., and Anthony Bassler, New York.

Dr. Frank Smithies, Chicago, read a paper on "Pericholecystitic Adhesions: Their Importance and Clinical Recognition." Discussed by Drs. Robert T. Morris, New York; G. A. Friedman, New York; Mary E. Dunning Rose, New York; William Van Valzah Hayes, New York, and Roland Hazen, Paris, Ill.

Dr. G. A. Friedman, New York, read a paper on "The Probable Endocrinic Origin of Peptic Ulcer." Discussed by Drs. Frank C. Mann, Rochester, N. Y.; V. A. LaPenta, Indianapolis; Betram W. Sippy, Chicago, and Martin E. Rehfuss, Philadelphia.

Dr. Martin E. Rehfuss, Philadelphia, read a paper on "The Possibilities of Fractional Gastric Analysis." Discussed by Drs. William Van Valzah Hayes, New York; Frank Smithies, Chicago, and A. F. R. Andresen, Brooklyn.

Dr. Thomas Charles Martin, Washington, D. C., read a paper on "An Operation for Internal Hemorrhoids under Local Anesthesia." Discussed by Drs. Marvin H. Smith, Jacksonville, Fla.; William M. Beach, Pittsburgh; J. Rawson Pennington, Chicago; Dwight H. Murray, Syracuse, N. Y.; William H. Stauffer, St. Louis, and Charles D. Aaron, Detroit.

Friday, June 14—Morning

The meeting was called to order by the chairman.

Dr. Harry B. Eisberg, New York, read a paper on "Intestinal Obstruction: Continued Studies from Surgical Research Laboratory, New York University." Discussed by Drs. Dwight Henderson Murray, Syracuse, N. Y., and James J. Moorehead, Chicago.

Dr. J. Rawson Pennington, Chicago, read a paper on "The End-Results of Operations for Cancer of the Rectum, with Suggestions for Improving Them." Discussed by Drs. Dwight Henderson Murray, Syracuse, N. Y; William M. Beach, Pittsburgh; Charles J. Drueck, Chicago, and George E. Pfahler, Philadelphia.

Dr. George E. Pfahler, Philadelphia, read a paper on "The Importance of Complete Roentgen Study of the Gastro-Intestinal Tract and Gallbladder in All Obscure Abdominal Cases." Discussed by Drs. Bertram W. Sippy, Chicago; William Van Valzah Hayes, New York; Aloys Heinen, Chicago; J. M. Rector, Columbus, Ohio; John Guttman, New York, and Horace W. Soper, St. Louis.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 29, 1918

WAR TIME DIFFICULTIES IN PRACTICAL DIETETICS

The new adjustments of food conditions thus far experienced in American homes have been brought about by voluntary effort and economic necessities rather than by governmental procedure. There has been no attempt at compulsory rationing, such as has been attempted abroad. "The Food Administration," said Herbert C. Hoover in a recent address, "has not taken the attitude of the general in command giving orders. Our attitude to the American public has been consistent, that we should ask for service, that we should ask for self-sacrifice, that we should tell in a clear and direct way the why and wherefore of every request. . . . The Food Administration has been founded on voluntary effort. We have no desire to depart from this idea, but if we are to accomplish our purpose it must be accomplished by voluntary effort."

Even an honor system of voluntary rationing requires the application of intelligence in the readjustment of dietaries occasioned by the exclusion or reduction of certain items in the diet. The difficulties are not diminished by the fact, already demonstrated by a single year's experience, that the conditions of supply may change from month to month in such a way as to require new plans. We must almost adjust ourselves, like an army in the field, to the day's orders. If the more intelligent classes of our communities are finding that this novel necessity taxes their ingenuity, how much greater must be the perplexity among those groups less competent to meet new situations with skill and forethought. How can a solution be found?

These comments have received added force from the experience that our English allies have acquired in the conduct of the large number of hostels where, under governmental patronage, great numbers of munition workers are now fed. Catering according to custom is an impossibility in a war time canteen. The problem of satisfying the boarder and obeying the mandates of the food administration at the same time has tried the matrons set to the tasks. The crux of the situation has been clearly stated by Miss Chrystal[1] of the Welfare and Health Section, Ministry of Munitions: "The best use of substitutes and the most economical use of food generally are matters which require a great deal of skill, and which may be beyond the powers of ordinary English cooks."

Such perplexities are assuredly not negligible. Our military authorities have begun to realize the true value of a trained army cook; the civilian armies must also be provided for. Some of the difficulties encountered in the new kind of service that hostels represent are worth mentioning because they have both psychologic and physiologic import in nutrition. Variety affects efficiency both physically in relation to digestion and psychologically. Sameness is apt to characterize institutional food, and it is not surprising that hostel catering should have the same fault. Detailed observation has led inspectors to believe that one of the secrets of successful hostel management lies in preserving the tenants' interest in their meals. It is a common experience in hostels that the nerve strain of heavy munition work produces in women a disposition to be difficult about food, and where there is little discontent it is generally found that variety of food is studied. The great difficulty is that, although monotony is resented, the workers are conservative and suspect new dishes.

The munition worker is not unlike the patient that demands a diet list from his physician. Geographic and racial peculiarities and dietary customs offer almost insurmountable obstacles to many rational innovations. Thus one hostel inspector reports that "potato dishes are being tried with considerable success. Maize has been found to be unpopular and indigestible. Suet puddings and rolls are thought by the workers to be sustaining." Not only the proper selection and cooking of food, but also suitable service is indispensable to success. And the problem of waste looms up larger as the food stores become smaller.

In the face of such emergencies it behooves the medical profession to welcome and encourage in this country the growth of a movement that is destined to bring help and stimulus in meeting these problems of the art of living. Home economics has too long been looked on as a fad. Rule of thumb methods are no longer synonymous with household arts. Witness the speedy success with which substitutive cereals have been employed in cookery throughout the United States within the past few months. From the primary schools to the colleges for women our girls are being taught the dignity of home economics and the underlying sciences. Our profession is all too slow in realizing what these newer forms of theoretical and vocational education actually are destined to mean, not only to the hospital or institutional dietitian and to the trained nurse, but also to the nation at large. Let us dignify the art of dietetics.

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[1] Chrystal, E. M.: Food in Hostels, National Health Insurance, Medical Research Committee, Special Report Series, No. 13, Appendix III, 1918.

THE ORIGIN OF COLOSTRUM

The milk that female mammals secrete during the first few days after parturition, at the beginning of their period of lactation, is quite different in composition from the fluid produced at a later stage. It is known under the name of colostrum, and the colostral characteristics persist for varying periods in different species. Colostrum is a more viscid fluid than the later milk. It is richer in proteins, particularly lactalbumin, and total solids; unlike ordinary milk, it may even coagulate on being heated. Colostrum contains many cells designated as milk corpuscles, which contain nuclear material, whereas later milk is essentially free from such products. Regarding the fat content, the statistics are somewhat uncertain; but it has been reported that the colostral fat has a higher melting point and more of the lipoids, cholesterol and lecithin, than has ordinary milk.

Many students of the value of milk as a nutrient have placed emphasis on the importance of colostrum in the nutrition of the young. They believe that, owing to its comparative richness in the different types of foodstuffs, colostrum helps to avert considerable declines in body weight and retardation of growth during the earliest period of infancy. For example, in Dr. Lane-Claypon's elaborate survey of milk and its hygienic relations, the following statement appears: There is no doubt that colostrum is of primary importance to the young animal, and there is no way of replacing it. An infant deprived of the colostrum of its mother must endeavor, not always with success, to make up later the disadvantage under which it has labored at the start.[1] When it is added further that colostrum is supposed by some to have a laxative effect, the foundation for the belief of the special value of this secretory product for the first few feedings of the newly born will better be understood.

Other investigators, on the other hand, have not accepted this purely teleological explanation for the occurrence of colostrum. They believe that this product is the temporary result of the imperfect activity of the mammary glands when they start their functioning. The peculiar composition of the fluid, with its comparative richness in cellular constituents, is regarded as a natural result of the washing out of ducts hitherto inactive. Not until the pent up cell débris is discharged does a standardized type of secretion ensue, on this hypothesis. A recent decidedly unique observation, made by Hill[2] at the Maryland Agricultural Experiment Station, may help to throw light on the real significance and origin of colostrum. A 4 months' old virgin doe kid spontaneously commenced to secrete milk having all characteristics, properties and chemical composition of the milk secreted by its mother and other goats under observation. At no time, from the earliest secretion of milk, was there any colostrum secreted. This would indicate that the secretion of colostrum is associated with and possibly is produced by the cessation of pregnancy, and may not occur in lactation not associated with pregnancy.

A BRITISH VIEW OF THE AMERICAN MEDICAL ASSOCIATION'S WAR ACTIVITIES

The *British Medical Journal* (June 1) comments on the editorials which appeared in THE JOURNAL, April 20 and 27, relative to the call of Surgeon-General Gorgas for five thousand more medical officers. Our confrère observes that the American Medical Association offered its services to the government at the time the United States entered the war just as did the British Medical Association at the beginning of the conflict, and intimates that we are going through their experience when we call only for a sufficient number of volunteers to meet immediate needs. As to this, of course the Surgeon-General is not endeavoring to supply the immediate needs, because these have been supplied; what the Surgeon-General desires is to prepare for future needs. Incidentally we might add that this need may not be far distant, judging from the outlook for rapid enlargement of our National Army.

Referring to the call of our Surgeon-General, the *British Medical Journal* says: "The American Medical Association, like the British Medical Association, has a War Commitee which is taking up this call with energy and enthusiasm. The Surgeon-General desires that the five thousand shall be secured without serious hardship to any community, manufacturing concern or other civil activity, and consequently the American Medical Association has begun to investigate the conditions in all parts of the country so as to produce a survey which will 'provide a basis for accurate, intelligent, cooperative effort.'" It goes on to say that our War Committee, as did theirs, deliberated on the advisability of calling for a voluntary draft, which would mean that every physician in active practice would volunteer as a member of the Medical Reserve Corps and be subject to call. "The American Medical Association has deemed this extreme measure [that is, voluntary draft] unnecessary for the present at least. The organization of such a scheme would have afforded excellent training for the work the Association will have to face if ever it becomes necessary in America to pass a military service act in any way comparable to that which has been found necessary in Great Britain." However, attention is called to the relatively large number of medical practitioners in America as compared with the number in Great Britain.

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[1] Lane-Claypon, Janet E.: Milk and Its Hygienic Relations, London, 1916.

[2] Hill, R. L.: The Analysis of Milk Secreted by a Suckling Doe Kid, Jour. Biol. Chem., 1918, 33, 391.

Quoting our statement that "the time has come for every medical man under 55 years of age who is physically qualified to consider seriously for himself the question of his duty to his government," the *British Medical Journal* suggests that "no individual practitioner can possibly judge for himself the medical needs of the community in which he practices or the hardship which he himself will suffer." This fact is being recognized in the work being done by the state and county organizations. It is appreciated that even the county society, except where the county includes large centers of population and consequently a large number of physicians, is seldom qualified to pass judicially on the question as to whether such and such a man could be spared or should offer his services. The plan now being tested out in some of the Councilor Districts of Nebraska is more likely to result in judicious conservative selection, with personal bias eliminated. There, as mentioned elsewhere in this issue, it is proposed that a committee composed of a representative from each county society in the Councilor District, with the councilor of the district acting as chairman, shall indicate those who should apply for commission and in what order, so that the quota assigned to that district will be available.

WAR GASES AND ANTIVIVISECTIONISTS

According to investigations in progress on animals at the Rockefeller Institute for Medical Research,[1] some degree of analgesia may be produced by at least three widely different war gases—chlorin, phosgen and dimethylsulphate[2]—and may perhaps be a property of most gases usable for military purposes. Auer, who has conducted the experiments with dimethylsulphate, has reported that in animals gassed with fumes of this compound a strong generalized analgesia is observed within a few hours after exposure to the fumes, which reaches a high degree within twenty-four hours. If the animal survives, the analgesia may still be well marked six months afterward. Furthermore, we are assured that in such animals severe operations may be performed without any anesthetic, the operation eliciting no indications or only slight indications of pain. If these experimental observations find their counterpart in the experience of the battlefield, the analgesic property may be utilizable in gassed soldiers who are also wounded and require surgical intervention.

A further possible practical outcome of the animal experiments with dimethylsulphate fumes relates to the necropsy findings of localized pulmonary edema as a result of gassing.[3] The edema rarely involves the whole lung, only a certain lobe or portions of a lobe showing a striking degree of pulmonary edema. It is by no means infrequent to find one lobe fairly saturated, while the rest of the entire lung tissue is practically free from fluid.

According to Auer, this condition is due apparently to the combination of a partial or complete stenosis of a bronchus or bronchiole with inspiratory dyspnea. A marked inflammation of the respiratory passages with pseudodiphtheritic membrane formation may occur locally. Therefore during each inspiration, which is slow, labored and prolonged in the gassed animal, the capillaries of the alveolar walls are subjected to an aspirating action which facilitates or initiates the passage of a transudate into the alveolar spaces. The production of this transudate is probably also aided by a local damage of the alveolar epithelium which the war gas produces. So far as such conditions may be found in gassed soldiers, it is suggested that all inspiratory dyspnea should be ameliorated as much as possible, by tracheotomy and artificial respiration if necessary, aiming by this means to ward off pulmonary edema.

And in the meantime, while patient investigators are trying their best by animal experimentation to kindle a spark of hope for the unfortunate victims of a fiendish mode of warfare, the complacent stay-at-home "antivivisectionists" and their mouthpiece—*Life*—are doing their worst to extinguish it. Shall humanity tolerate such traitors to its cause? Speaking of this "menace of unreason as applied to problems concerning hygienic and moral measures that affect the rights of the individual and society," Joseph Jastrow, professor of psychology in the University of Wisconsin, says in a recent work on "The Psychology of Conviction":

> Upon the basis of a similarly inspired opposition—and one quite as unintelligent—we have the anti-vaccinationists; and reaching to higher circles where prejudices, like other beliefs, acquire a more moralized statement, the antivivisectionists. It is gratifying to record that American conditions up to the present have not been as favorably disposed toward this propaganda of unreason as to others; yet it is possible to cite the well-known fact that a popular periodical, which ministers to the relaxations of life and stands for that sanity of view which a sense of humor so notably confers, which circulates among the more cultivated classes of society, incessantly preaches an ignorant and false crusade, brutally misrepresents the noble army of experts who are carrying the triumphs of science into the field of deepest concern to human interests, criticizes without authority and ignores the open records of achievement; while in the main stultifying its own position, it unquestionably fosters the cause of prejudice.

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[1] Auer, J.: Generalized Analgesia in Cats After Exposure to a War Gas $(CH_3)_2SO_4$. Proc. Soc. Exper. Biol. and Med., 918, **15**, 104.

[2] Neiding: Russk. Vrach, 1917, **16**, 397.

[3] Auer, J.: Localized Pulmonary Edema in Cats After the Inhalation of a War Gas $(CH_3)_2SO_4$, Proc. Soc. Exper. Biol. and Med., 1918, **15**, 106.

Current Comment

INTERN TRAINING AND STANDARDIZING OF HOSPITALS

The medical graduate who has spent a year or more as an intern in a good hospital is acknowledged to be so much better prepared for his professional career than the man without it, that this internship should be required of all medical students. The making of such a requirement rests with either the medical schools or the state licensing boards. Already eight medical schools have made the intern year mandatory for the degree, and seven state licensing boards have made it an essential qualification for a license. As the intern service becomes an essential part of the training of medical students—a requirement rather than an optional, extramural course—its character and content must be subject to regulation. Each school or state board which adopts this requirement must decide what are the essential qualifications whereby a hospital can provide a satisfactory intern training, and must prepare a list of the hospitals which, in its judgment, possess these qualifications and whose internships it will recognize. The standardization of intern training and the classification of hospitals on the basis of their facilities for intern instruction have been a part of the program of the Council on Medical Education of the American Medical Association since it first took up the work of improving the standards of medical education. The Council has already made two surveys of hospitals and published two editions of a list of those considered qualified to provide acceptable internships. It is now making a third survey and has just sent out a questionnaire to all of the hospitals of the country reporting interns. In cooperation with the Council, the state medical associations are appointing hospital committees to act in an advisory capacity as the survey progresses. Besides the collecting of this information concerning the hospitals which provide internships, and as conditions may require it, it is proposed to make inspections of certain hospitals. In this standardization of hospitals, special emphasis will be laid on the qualifications of the hospital staff, the adequacy of its equipment for modern, scientific diagnostic and therapeutic procedure, the work required of its interns, and the supervision given to that work. It is on these points chiefly that the value of the intern's training depends. The intern year must become of equal rank educationally with the previous four years of the student's medical course. The staffs of hospitals should look on their relation to the intern as that of teacher to student. Some hospitals and their staffs have long felt this responsibility and have given their interns training of high quality. In the majority, however, there will need to be something like a revolution in the hospital's conception of its duty to the intern. The hospital must recognize that while primarily it secures the aid of trained interns so as to provide adequate and proper care for the sick, and thus is better able to fulfil its duty and responsibility to the community, actually the hospital secures the services of these interns without expense because it is presumed to give the student a quid pro quo in the form of advanced clinical instruction and experience.

THE RESPONSE OF THE MEDICAL PROFESSION

We understand that during the four weeks since the publication of the "Honor Roll" in The Journal (June 1), practically 2,775 physicians have made application for commission in the Medical Reserve Corps and a little less than 200 for commission in the U. S. Naval Reserve Force. Of course, a certain percentage of these will be unable to qualify. However, it shows how well the medical profession is appreciating its responsibility. The question with the large majority of physcians is, Where can I best render service? Apparently many physicians have found the correct answer.

THE HONOR ROLL

May we again call the attention of those who desire to keep the "Honor Roll" (The Journal, June 1) complete and up to date to the fact that this may be done by adding to it the names of those accepting commissions which now appear in The Journal each week. In the present issue the names of 199 physicians are recorded as having accepted commissions in the Medical Reserve Corps of the Army and 180 as having accepted commissions in the U. S. Naval Reserve Force.

ONE FORM OF VOLUNTARY SELECTIVE CONSCRIPTION OF PHYSICIANS

The problem of supplying the required number of officers for the Medical Reserve Corps, without working "serious hardships on any community, manufacturing concern, or any other civil activity," is being solved, not by any hard and fast or harsh plan, and in applying it all over the country, but by simply keeping the principle in mind and applying it where and in the manner best suited to the conditions that exist in the community. A plan workable in one state may be impracticable in another. What may be an ideal scheme in Kansas or Nebraska might be impossible in New York or New Jersey. Among those being put to a practical test is that proposed by Johnson County, Nebraska. The members of this society have agreed that those under fifty-five years of age will apply for commission in the Army or Navy and will agree to accept the commission if granted. The action of this individual society, however, was taken with the understanding that it should be obligatory only in the event of the remaining counties of the Councilor District adopting it. This, as we understand, has been done by all the counties in the District. The plan outlined calls for a committee composed of one representative from each of the county societies of the District, with the Councilor of the District acting as chairman. This committee, therefore, represents not a small community, but a definite and sufficiently wide territory to eliminate personal prejudice or personal influence; at the same time it has a knowledge of the actual conditions existing in every part of its territory. The plan is really carrying out the principles underlying the selective service regulations. It is an ideal voluntary conscription of the medical profession by itself, one that recognizes the needs of the community and the social condition of the individual practitioner.

Medical Mobilization and the War

Personnel Changes in Expeditionary Forces

Lieut.-Col. George P. Peed, M. C., U. S. Army, who has been in command of American Red Cross Military Hospital No. 1, Neuilly, France, and who later was made medical director of all American hospitals in Paris, has been assigned to new duties involving the organization of other American military hospitals. He has been replaced as military director by Lieut.-Col. Ernest G. Bingham, M. C., U. S. Army, who will correlate the work of all the military hospitals in Paris. Colonel Bingham has been succeeded as commanding officer of the hospital in Neuilly by Major James P. Hutchinson, M. R. C., U. S. Army, medical and surgical director of the institution.

Additions and Improvements to Hospital Buildings at Army Camps

Hospitals, convalescent barracks, infirmaries and nurses' quarters added to the hospital establishment of the Army in this country during the past six months, and in the course of construction by the Construction Division of the Army, have been estimated to cost $25,173,417.55. The following construction has been completed: A 500-bed addition to both of the hospitals at Camp Gordon and Camp Dodge, including officers' and nurses' quarters, at a cost of $550,000; additional two-story ward convalescent barracks at Army and National Guard base hospitals, with a capacity of from 300 to 900 beds, with umbrella sheds connecting them, at a cost of $9,179,000; two regimental infirmaries at each National Army cantonment and one regimental infirmary at each National Guard camp and remount depot, at a cost of about $344,000; dental infirmary operating building at National Guard camps and National Army cantonments, at an estimated cost of $912,000; a dental infirmary and an eye, ear, nose, and throat clinic at each National Guard camp at a cost of $139,200; an additional 1,500-bed hospital at Camp Merritt, at a cost of $1,115,000; a venereal tent hospital and additional hospital buildings at Camp Stuart, at a cost of $220,000; a 500-bed hospital at the engineers' training camp at Belvoir, at a cost of $1,125,000. It has been necessary also to install steam-cooking equipment in the general kitchens of hospitals on account of increased bed accommodations in National Army cantonments and National Guard camps; there have also been constructed nurses' quarters and additions to officers' quarters at a cost approximating $1,000,000, together with wards and isolation wards for the care of female nurses. These wards are also being established at Camps Merritt, Stuart, Humphreys, Johnston, and General Hospitals No. 2 at Fort McHenry (Md.), No. 6 at Fort McPherson, No. 8 at Otisville (N. Y.), and No. 10 at Fox Hills (N.Y.), at an estimated cost of $181,350. Sanitary accommodations have also been installed in the wards at the hospitals at National Army cantonments. Automatic fire-alarm systems have been installed in the hospitals of the National Army and National Guard camps, and at Camps Merritt, Stuart, Funston, Walter Reed General Hospital, and General Hospital No. 1 at New York, at an estimated cost of $1,200,000. Screening is being installed in all hospitals, and steam disinfectors at the National Army and National Guard camps, as w ell as at Camps Johnston, Stuart, Merritt, and at General Hospital No. 3, Colonia, N. J., at a cost of $69,721.

The following construction is in progress at the United States Army general hospitals: Additional hospital buildings in tile at the Walter Reed General Hospital, Washington, D. C., at a cost of $733,400; a 1,000-bed tuberculosis hospital at Denver, at a cost of $1,720,000; a 1,000-bed hospital for the same purpose at Azalea, N. C., at an approximate cost of $1,325,000; a 120-bed hospital at Norfolk, Va., at an approximate cost of $205,900; a 1,500-bed hospital at United States General Hospital No. 3, Colonia, N. J.; at an estimated cost of $1,632,000; additional two-story nurses' quarters, accommodating 150 nurses, at United States General Hospital No. 6, Fort McPherson, Ga., at an approximate cost of $88,700; a hospital for the care of blind soldiers at Rolan Park, Md., to be known as the United States General Hospital No. 7, at an estimated cost of $140,446; a tuberculosis hospital with a capacity for 650 patients at General Hospital No. 8, Otisville, N. Y., at an estimated cost of $957,000; a hospital which will care for 1,762 patients at Fox Hills, N. Y., at a cost of $2,075,000; a two-story convalescent hospital at Fort Oglethorpe, Ga., at General Hospital No. 14, accommodating about 1,000 patients, at an estimated cost of $202,200. The Lakewood Hotel and "Florence in the Pines," at Lakewood, N. J., have been leased for hospital purposes at an annual rental of $58,500.

Changes in Personnel of British Army Medical Service in France

The Secretary of the War Office announces the retirement of Lieut.-Gen. Sir Arthur T. Sloggett as Director General, due to the fact that he has completed the period of his appointment and passed the age limit for service. Sir Arthur Sloggett is a Fellow of King's College, London, and began his army career in 1881; in 1884 he served on the Indian frontier; in 1896 he was senior medical officer of the British troops with the Dongola Expeditionary Force. He served in the Sudan in 1897-1898 in which campaign he was shot through the chest in the cardiac region; on his recovery he rendered distinguished service in South Africa. He then became P. M. O. of Home and London Districts, and of the Sixth Division in India, becoming Director-General of Medical Services in India in 1911, and Director-General A. M. S. at the War Office on June 1, 1914. He has been in France as Director-General Medical Services of the British armies in that country since October, 1914. His conspicuous success has been due to a great extent to his use of scientific methods and to his sympathy with the views of the civilian physicians who have served under him.

Sir Arthur Sloggett is to be succeeded by Major-General C. H. Burtchaell. Major-General Burtchaell graduated from the University of Dublin in 1889, entering the army in 1891. He served in the North-Western Frontier campaign in India in 1897-1898, being present at all the principal battles, and throughout the South African war, and in 1902 was appointed principal medical officer to the South African Constabulary; in 1905 he rejoined the army. In 1907 he organized the experimental scheme of sanitary training for fighting troops later adopted for the army. In 1908 he became director of the medical service work of the first medical tour held in the British Army, in 1910 becoming Assistant Director-General, Army Medical Services, War Office, having served as Assistant Director-General Medical Services in France since October, 1914. He was promoted to colonel in March, 1915, and to temporary Surgeon-General in October, 1917. He has distinguished himself in the present war, being mentioned seven times in dispatches and being awarded the C. B., the C. M. G., and the Legion of Honour. He is especially esteemed by the Dominion forces, having been associated with them for three years in the South African campaign.

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R. C. [illegible]
R. D. [illegible]
C. W. [illegible]
F. I. [illegible]
R. A. [illegible]
M. S. [illegible]
E. R. [illegible]
W. S. [illegible]
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J. [illegible]
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W. [illegible]
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E. P. [illegible]
R. J. [illegible]
J. H. [illegible]
K. A. [illegible]
A. H. [illegible]
L. N. [illegible]
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J. F. [illegible]
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L. [illegible]
C. [illegible]
A. [illegible] rchard
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C. N. SMITH, Philadelphia
P. R. THOMAS, [illegible]phia
W. L. [illegible]hia
C. F. [illegible]
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G. M. MALKIN, Milwaukee
E. E. DOCKERY, Ripon

CORRECTION

Under "Orders to Officers of Medical Reserve Corps" in the issue of June 8 appeared the following order: To Camp Kearny, Linda Vista, Calif., base hospital, Capt. JAMES W. HOUSTIS, Los Angeles. This should have been, Capt. JAMES W. HEUSTIS.

PROMOTIONS

To colonel, M. C., N. A., Majors J. M. T. FINNEY and WILLIAM S. THAYER; to lieutenant-colonel, Majors THOMAS R. BOGGS, JAMES T. CASE, GEORGE W. GOLDTHWAITE, JAMES F. McKERNON, CHARLES H. PECK, THOMAS A. SALMON, HUGH H. YOUNG, N. ALLISON and E. L. KEYES.

ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

To Army Medical School for instruction, and on completion to Boston, Mass., Harvard Graduate School of Medicine, for instruction, and on completion *to his proper station*, from Camp Hancock, Capt. EDMOND J. MELVILLE. For instruction *from* Camp Sevier, Lieut. HARLIN G. TUCKER; from duty as officer in the Medical Reserve Corps, Lieuts. EDWARD A. LANE, RALPH M. DEGAAFF.

To Asheville, S. C., for inspection, and on completion *to his proper station*, from Biltmore, Lieut.-Col. WILLIAM H. SMITH.

To Camp A. A. Humphreys, Accotink, Va., as assistant to camp surgeon, from Camp Lee, Lieut. HENRY R. WESTON.

To Camp Cody, Deming, N. M., as assistant to camp surgeon, from Fort Slocum, Major ROBERT E. PARRISH.

To Camp Custer, Battle Creek, Mich., *Fort Oglethorp*e and *Camp Pike,* Little Rock, Ark., base hospitals, and on completion *to his proper station,* from Camp Dodge, Lieut.-Col. FRANK C. TODD.

To Camp Grant, Rockford, Ill., as assistant to camp surgeon, from Fort Clark, Major GEORGE B LAKE.

To Camp MacArthur, Waco, Texas, as camp surgeon, from Southern Department, Major JOHN T. AYDELOTTE.

To Camp Merritt, Hoboken, and *Camp Rariton,* Metuchen, N J., for inspection, and on completion *to his proper station,* Lieut.-Col. FLOYD KRAMER.

To Camp Pike, Little Rock, Ark., as camp surgeon, from Charleston, Major GARFIELD L. McKINNEY.

To Cape May, N. J., base hospital, from Camp Devens, Lieut. ARTHUR H. NYLEN.

To Charleston, S. C., Hot Springs, N. C., Knoxville, and *Nashville, Tenn., Huntsville, Ala., Cleveland, Ohio,* and *Pittsburgh, Pa.*, for duty, and on completion *to his proper station*, Lieut.-Col. JOHN A. HORNSBY. *To Charleston, S. C.*, for duty, from Camp Greene, Major ERNEST A. GATES.

To Fort Leavenworth, Kan., Department Laboratory, for duty, from Camp Doniphan, Lieut. FREDERIC H. THORNE.

To Hoboken, N. J., for duty, from Camp Custer, Lieut.-Col. NEAL N. WOOD.

To Mineola, L. I., N. Y., Hazelhurst Field, for duty, and on completion *to his proper station*, Col. WILLIAM O. OWEN.

To Newport News, Va., for consultation, and on completion *to his proper station,* Col. PEARCE BAILEY.

To New York City for duty, and on completion *to his proper station*, Col. WINFORD R. SMITH, Lieut.-Col. EDWARD B. VEDDER.

To Philadelphia, Pa., University of Pennsylvania, *New York City*, Bellevue Hospital, and Rockefeller Institute, for inspection, and on completion *to his proper station,* Lieut.-Col. RAYMOND P. SULLIVAN.

To Plattsburg Barracks, N. Y., for duty, from Fort Porter, Lieut.-Col. THOMAS D. WOODSON.

To Washington, D. C., for consultation, and on completion *to his proper station,* from Camp Shelby, Col. WILLIAM F. LEWIS. For duty in the Surgeon General's Office, from Walter Reed General Hospital, Major RAYMOND C. BULL.

The following order has been revoked: *To Hoboken, N. J.,* for temporary duty, from Camp Cody, Lieut.-*Col.* JOHN B. ANDERSON.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp Jackson, Columbia, S. C., for duty, from Camp Gordon, Major CABOT LULL, Jr., Birmingham. With the board examining the troops for cardiovascular diseases, from Camp A. A. Humphreys, Lieut. HENRY C. HARRIS, *Birmingham.*

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Lieut. EDWARD L. GIBSON, Enterprise.

To Camp Lee, Petersburg, Va., for duty, from Camp Wheeler, Lieut. FRANCIS M. INGE, Mobile.

To Fort Sam Houston, Texas, for duty, from Camp MacArthur, Lieut. THOMAS C. SAVAGE, Demopolis.

To Lincoln, Nebr., University of Nebraska, for duty, from Fort Riley, Lieut. RUSSELL CALLEN, Birmingham.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Williamsbridge, N. Y., for* temporary duty, *and on* completion *to Hoboken, N. J.,* for duty, from Fort Riley, Major WESTLEY E. DRENNEN, Birmingham.

Arkansas

To Camp Dix, Wrightstown, N. J., for duty, from Camp Devens, Lieut. MAC McLENDON, Marianna.

To Camp Grant. Rockford, Ill., for duty, from Camp Pike, Capt. SCOTT C. RUNNELS, Little Rock.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Oglethorpe, Lieut. NEWMAN *B. BURCH, Colt.*

To Camp Pike, Little Rock, *Ark.*, for duty, from Fort Riley, Lieut. CHARLES G. MINKLE, Batesville.

To Camp Travis, Fort Sam Houston, Texas, for duty, from Fort Oglethorpe, Lieut. MAURICE F. LAUTMAN, *Hot Springs.*

To Camp Zachary Taylor, Louisville, Ky., for duty, from Camp Pike, Lieut. FRANK L. CASTLEBERRY, *Peragold.*

To Cape May, N. J., base hospital, from Camp Wheeler, Lieut. WALLACE D. ROSE, Little Rock.

To Hoboken, N. J., for duty, from Army Medical School, Lieut. JOHN S. WILSON, Plantersville; from Fort Oglethorpe, Lieut. ERNEST DARNALL, *Widener.*

California

To Camp Fremont, Palo Alto, Calif., base hospital, from San Francisco, Capt. WILLIAM L. ADAMS, Fresno.

To Camp Greene, Charlotte, N. C., base hospital, from Camp Kearny, Capt. CHARLES A. WAYLAND, San Jose.

To Camp Kearny, Linda Vista, Calif., base hospital, Capt. HARVEY L. THORPE, Los Angeles.

To Camp Lewis, American Lake, Wash., for duty, Capt. DONALD W. MACKENZIE, Yermo; Lieut. ALSON A. SHUFELT, San Francisco. With the board examining the troops for cardiovascular diseases Lieut. DONALD CASS, San Francisco.

To Camp Meade, Annapolis Junction, Md., for duty, from Camp Kearny, Capt. LIONEL D. PRINCE, San Francisco.

To Camp Pike, Little Rock, Ark., base hospital, Capt. HENRY H. LISSNER, Los Angeles.

To Camp Shelby, Hattiesburg, Miss., as orthopedic surgeon, from Chicago, Lieut. OSCAR P. STOWE, Mill Valley.

To Fort Oglethorpe for instruction, Lieuts. JOHN R. SHEA, Los Angeles; HORACE H. McCOY, San Francisco; from Fort Riley, Capt. BERTRAM C. DAVIES, Los Angeles.

To Lakewood, N. J., for duty, from Camp Dodge, Capt. BERTNARD SMITH, Los Angeles.

To report by wire to the commanding general, western department, for assignment to duty, Lieut. WALTER R. SCROGGS, *Berkeley.*

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Camp Custer,* Battle Creek, Mich., Capt. LAWRENCE H. HOFFMAN, San Francisco.

To San Francisco, Calif., for instruction, and on completion *to Camp Kearny,* Linda Vista, Calif., base hospital, Lieut. JAMES A. GUILFOIL, San Luis Obispo. On completion *to their proper stations,* from Camp Fremont, Lieut. CHANNING HALL, Alameda; from Camp Kearny, Capt. JOHN A. BALSLEY, Santa Monica. *To Letterman General Hospital,* for temporary duty, Lieuts. EDWARD R. COX, Los Angeles; CHARLES A. CRAIG, San Francisco.

To Talmadge, Calif., Mendocino State Hospital, for intensive training, Lieut. MERVYN H. HIRSCHFIELD, San Francisco.

The following order has been revoked: *To report by wire to the commanding general,* western department, for assignment to duty, *Lieut.* FRED O. BUTLER, Eldridge.

Colorado

To Army Medical School for instruction, from Camp Cody, Lieut. WILLIAM D. FLEMING, Denver.

To Jackson, Barracks, La., for duty, Capt. ALBERT L. STUBBS, La Junta.

To report to the commanding general, southern department, *for duty,* from Fort Sam Houston, Capt. FRED F. STOCKING, Floresta.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to his proper station*, from Jefferson Barracks, Lieut. ARCHIBALD J. CHISHOLM, Antonio.

To San Francisco, Calif., for duty, from Fort Riley, Lieut. ARTHUR G. TAYLOR, Grand Junction.

Connecticut

To Camp Devens, Ayer, Mass., base hospital, Lieut. HENRY C. DIXON, Bridgeport. For duty, from Army Medical School, *Lieut.* HAROLD THOMAS, Hartford; from Fort *Oglethorpe*, Lieut. BERNARD F. GILCHRIEST, New Haven.

To Camp Dix, Wrightstown, N. J., for temporary duty, *from Army* Medical School, Lieut. HERMAN H. HURWITZ, *Hartford.*

To Camp Jackson, Columbia, S. C., for duty, from Fort Sam Houston, Capt. JAMES C. WILSON, Hartford. *As a member of the* tuberculosis examining board, from New Haven, *Lieut.* MARCUS C. BECK, Bridgeport.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Oglethorpe, Lieut. SIDNEY C. DALRYMPLE, Waterbury.

To Mineola, L. I., N. Y., Hazelhurst Field, Signal Corps Aviation School, for duty, Capt. ARTHUR E. BRIDES, New Haven.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to his proper station,* from Camp Gordon, Major WILLIAM F. VERDI, New Haven.

To Rochester Minn., Mayo Clinic, for instruction, and on completion *to Camp Custer,* Battle Creek, Mich., base hospital, from Fort Oglethorpe, Major HARRY M. LEE, New London.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Fort McPherson, Ga., for temporary duty,* from Fort Oglethorpe, Lieut. JAMES A. HARTEN, New Haven.

The following order has been revoked: *To Camp Jackson,* Columbia, S. C., for duty, Lieut. HYMAN A. LEVIN, New Haven.

Delaware

To Camp Meade, Annapolis Junction, Md., for duty, from Fort Oglethorpe, Lieut. ROBERT D. HIGGINS, Wilmington.

To Camp Wadsworth, Spartanburg, S. C., for duty, Lieut. HARRY C. HICKMAN, Wilmington.

To Fort Oglethorpe for instruction, Capt. HARRISON W. HOWELL, Wilmington.

District of Columbia

To Camp Zachary Taylor, Louisville, Ky., for duty, from Walter Reed General Hospital, Major DANIEL L. BORDEN, Washington.

To New York City, Neurological Institute for intensive training, Lieut. DORREL G. DICKERSON, Washington.

To Washington, D. C., American University, for duty, Lieut. HERBERT C. DALLWIG, Washington.

Florida

To Camp Gordon, Atlanta, Ga., for duty, from Fort Oglethorpe, Capt. HARRY B. McEUEN, Quincy.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Fort Oglethorpe, Lieut. RALPH J. GREENE, Loughridge.

To Fort McPherson, Ga., for temporary duty, Capt. WILLIAM S. MANNING, Jacksonville.

To Fort Oglethorpe for instruction, Capt. J. BROWN WALLACE, Tampa; Lieuts. EVANS L. HUGGINS, Freeport; RAYMOND D. TOMPKINS, Jasper; JOHN C. VINSON, Tampa; from Camp Joseph E. Johnston, Lieut. ODIS G. KENDRICK, Tallahassee.

Georgia

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Capt. DANIEL B. EDWARDS, Savannah.

To Camp Jackson, Columbia, S. C., base hospital, Lieut. MORTIMER A. EHRLICH, Bainbridge.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Capt. SAMUEL A. CLARK, Eatonton; Lieuts. GEORGE O. ALLEN, Fargo; OLIN S. COFER, Smyrna.

To C[illegible]; for duty, from Fort Oglethorpe, Lieut. THOM[illegible]

To [illegible] Junction, Md., for duty, from Camp Pike, [illegible] NEIL, Atlanta; from Fort Oglethorpe, Lieut. [illegible], Atlanta.

To Camp Sevier, Greenville, S. C., base hospital, Lieut. HARRY B. BRADFORD, Atlanta.

To Camp Shelby, Hattiesburg, Miss., base hospital, from Camp Gordon, Major JAMES E. PAULIN, Atlanta.

To report by wire to the Governor of the State of Georgia, as medical adviser, from Camp Hancock, Major WILLIAM C. LYLE, Augusta.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on co[illegible] N. J., base hospital, from Fort [illegible] RKER, Flintstone. On comple[illegible] duty, Lieut. CHARLES E. WAITS, Atlanta.

To San Francisco, Cal., for instruction, and on completion *to his proper station,* from Camp Cody, Capt. WILLIAM B. OREAR, Savannah.

Resignation of Lieut. CARL B. WELCH, Tifton, accepted.

Idaho

To San Francisco, Cal., for instruction, and on completion to his proper station, from Camp Cody, Capt. CHARLES H. SPRAGUE, Pocatello.

Illinois

To Army Medical School for instruction, from Camp MacArthur, Lieut. CLIFFORD E. BORGIN, Chicago.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Capt. CARL G. S. RYDIN, Chicago.

To Camp Custer, Battle Creek, Mich., base hospital, Capt. HAMMER C. IRWIN, Springfield. As a member of the board examining the troops for cardiovascular diseases, Capt. NEWELL C. GILBERT, Chicago. As orthopedic surgeon from Army Medical School, Lieut. RUSSELL A. GILMORE, Chicago.

To Camp Devens, Ayer, Mass., base hospital, Lieut. HARRY E. BUNDY, Chicag[illegible] thorpe, Lieuts. LEWIS K. EASTMAN, [illegible]

To Camp Gran[illegible] *surgeon, from* Chicago, Lieut. MIECISL[illegible] Chicago. Base hospital, from Chicago, L[illegible] N, Chicago. For duty, from Camp Cust[illegible] Y, Chicago.

To Camp Gree[illegible] ital, from Army Medical School, Lieut. Fl[illegible]

To Camp Jac[illegible] rthopedic surgeon, from Chicago, Lieut. [illegible] Aurora. Base hospital, Lieuts. HARRY [illegible], Chicago. For duty, from Fort Oglethorpe, Lieut. CLARENCE E. FRYBERGER, Oak Park.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Oglethorpe, Capt. FREDERICK I. BROWN, Chicago.

To Camp Kearny, Linda Vista, Calif., with the board examining the command for [illegible] diseases, from Fort Riley, Lieut. ELMER L. [illegible]

To Camp [illegible] or duty, from Camp Devens, Capt. JOHN G. FROST, Chicago; Lieut. FRANK E. SHIPMAN, Paris.

To Camp Lewis, American Lake, Wash., for duty, from Fort Riley, Lieut. EDWARD W. SIKES, Freeport.

To Camp Meade, Annapolis Junction, Md., for duty, from Camp Devens, Lieut. JOHN W. MARTIN, Oliver; from Fort Oglethorpe, Lieut. AMBLER C. PRUNER, Chicago.

To Camp Pike, Little Rock, Ark., for duty, from Fort Riley, Capt. IRA J. SCOTT, Danville; Lieuts. FRANKLIN W. PALMER, Chatsworth; OLIVER I. STATLER, Huntley.

To Fort Leavenworth, Kan., for duty, Lieut. HARVEY T. LITTLE, Chicago.

To Fort McPherson, Ga., for duty, Lieut. LOUIS M. GREENBURG, Chicago.

To Fort Monroe, Va., for temporary duty, from Fort Riley, Capt. REUBEN J. ATWOOD, Chicago.

To Fort Oglethorpe as instructor, from Chicago, Major JOHN RIDLON, Chicago; [illegible] t. EDWARD S. BLAINE, Chicago. For [illegible] M. PURVES, Des Plaines; CORYDON DI[illegible] s. JAMES V. ANDERSON, STEPHEN C[illegible] GREENBERG, JAMES T. GREGORY, R[illegible] LAUDE A. LINK, LEONARD F. SKLI[illegible], GEORGE L. VENABLE, Chicago; ELMER [illegible]; from San Antonio, Lieut. IRVING W. STEINER, Harvey.

To Fort Sam Houston, Texas, for duty, from Camp Beauregard, Lieut. STEPHEN C. BRADLEY, Marshall; from Camp MacArthur, Lieut. RAYMOND E. HILLMER, La Grange.

To Fort Screven, Ga., with the board examining the command for nervous and mental diseases, from Camp Shelby, Lieut. WALTER C. COOK, Peoria.

To Lakehurst, N. J., for duty, from Camp Dix, Lieut. RELZA N. SHERMAN, Fairmount.

To Lakewood, N. J., for temporary duty, Lieut. SAMUEL B. LEISER, Herscher.

To New Haven, Conn., for duty, Lieuts. OSCAR COHEN, Joliet; JAMES M. MORAN, JACOB SCHLESINGER, Oak Forest.

To Philadelphia, Pa., Medical Arts Building, for instruction, from New York City, Lieut. RAYMOND E. DAVIES, Chicago.

To Plattsburg Barracks, N. Y., for duty, from Lakewood, Major DANIEL A. K. STEELE, Chicago.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Camp Gordon,* Atlanta, Ga., base hospital, Lieut. GEORGE D. J. GRIFFIN, Chicago. On completion *to his proper station,* from Camp Grant, Lieut. JOHN M. BERGER, Chicago.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Gordon,* Atlanta, Ga., base hospital, Lieut. PAUL E. GREENLEAF, Bloomington.

To San Diego, Calif., Signal Corps Aviation School, for duty, from San Francisco, Capt. FRANK A. STOCKDALE, Coal City.

To San Francisco, Calif., Letterman General Hospital, for temporary duty, from Camp Fremont, Lieut. FRANK J. SCHICK, Chicago.

To Washington, D. C., for duty i[illegible] Office, from Camp Travis, Lieut. EUGENE S. [illegible]

Resignation of Lieut. ALONZO T. [illegible], accepted.

The following order has been revoked: *To Camp Colt,* Gettysburg, Pa., for duty, Lieut. MORRIS B. KARATZ, Chicago.

Indiana

To Camp Lee, Petersburg, Va., for duty, from Fort Oglethorpe, Lieut. JOHN F. DOWNING, Yorktown.

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieut. GEORGE M. COOK, Mooresville.

To Fort Benjamin Harrison, Ind., for duty, Capt. MALACHI P. COMBS, Terre Haute; from Camp Dix, Capt. GEORGE C. VAN MATER, Peru.

To Fort Oglethorpe for instruction, Capt. GEORGE H. VAN KIRK, Kentland; Lieuts. OLIVER M. JOHNSON, Kokomo; JOSEPH A. STOECKINGER, Mishawaka.

To Fort Sam Houston, Texas, for duty, from Camp Beauregard, Capt. JAMES A. WORK, JR., Elkhart.

To Fort Warren, Mass., for duty, Capt. LUKE P. V. WILLIAMS, Whiteland, Lieut. WILLIAM T. FISHER, Shelbyville.

To Hoboken, N. J., for duty, from Camp Meade, Lieuts. HERMAN H. GICK, Indianapolis; OLIVER E. GRIEST, Lafayette.

To Jackson Barracks, La., for duty, Lieut. MORA S. BULIA, Richmond.

To San Francisco, Calif., for instruction, and on completion *to his proper station,* from Camp Cody, Capt. BUDD VAN SWERINGEN, Fort Wayne.

Iowa

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Capt. HARRY J. SCHOTT, Sioux City.

To Camp Forrest, Chickamauga Park, Ga., for duty, Capt. ERIE D. TOMPKINS, Clarion.

To Camp Jackson, Columbia, S. C., for duty, from Dansville, Lieut. MILTON A. GIVEN, Des Moines.

To Camp [illegible] base hospital, from Fort Oglethorpe, Capt. CALVI[illegible] Moines. For duty, from Fort Riley, Lieut. JOHN [illegible], Eagle Grove.

To [illegible] Lake, Wash., for duty, from Douglas, Lieut. [illegible] Larchwood.

To [illegible] Junction, Md., for duty, from Fort Oglethorpe, Capt. [illegible] HILL, Charter Oak.

To Camp Pike, Little Rock, Ark., as *orthopedic surgeon, from* Boston, Capt. EARL D. McCLEAN, Oskaloosa. For duty, Lieut. RAYMOND L. LATCHEM, Walnut.

To Fort Leavenworth, Kan., for duty, Lieut. DAVID M. NYQUIST, Eldora.

To Fort Oglethorpe for instruction, Capts. NELSON McP. WHITEHILL, Boone; ERIE D. TOMPKINS, Clarion.

To Hoboken, N. J., for duty, Lieut. CHESTER H. JOHNSON, Cherokee; from Camp Grant, Lieut. ELLIOTT S. STRONG, Iowa City.

Kansas

To Camp Dodge, Des Moines, Ia., base hospital, from Fort Riley, Lieut. FRANCIS J. MOFFATT, Clyde.

To Camp Gordon, Atlanta, Ga., base hospital, from Fort Oglethorpe, Lieut. LOT D. MABIE, Kansas City.

To Camp Jackson, Columbia, S. C., base hospital, from Fort Riley, Lieut. GUY A. FINNEY, Wamego.

To Camp Pike, Little Rock, Ark., for duty, Lieuts. JAMES A. FULTON, Kansas City, JOHN R. CRAWFORD, Tonganoxie.

To Camp Zachary Taylor, Louisville, Ky., base hospital, Capt. GORDON M. GAFFORD, Kinsley.

To Fort Oglethorpe for instruction, Lieuts. EDWARD D. RODDA, Arma; WILLIAM O. WHITAKER, Wichita.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Camp Dodge*, Des Moines, Ia., base hospital, Lieut. FREDERICK P. MANN, Valley Falls.

To San Francisco, Calif., for duty, from Fort Riley, Capt. LEONARD S. STEADMAN, Junction City.

Kentucky

To Camp Holabird, Colgate, Md., for duty, from Camp Beauregard, Major PHILIP H. STEWART, Paducah.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Oglethorpe, Lieut. BERTON M. BROWN, Quicksand.

To Camp Lee, Petersburg, Va., for duty, from Camp Sheridan, Capt. GUY P. GRIGSBY, Louisville; from Fort Oglethorpe, Capt. SIDNEY J. ANDERSON, Midway; Lieut. THOMAS H. NELSON, Covington.

To Camp Meade, Annapolis Junction, Md., for duty, from Fort Oglethorpe, Lieut. OLIVER P. HENRY, Kildan.

To Camp Sherman, Chillicothe, Ohio, for duty, Lieut. TRAVIS D. RUDD, Hopkinsville.

To Camp Wadsworth, Spartanburg, S. C., for duty, Lieut. EARL J. EVERSOLE, Simpsonville; from Fort Oglethorpe, Lieut. EDGAR C. HAWKINS, Emmett.

To Fort Bayard, N. H., for temporary duty, from Fort Monroe, Capt. JAMES R. PEABODY, Louisville.

To Fort Benjamin Harrison, Ind., for duty, Lieut. WILLIAM M. EWING, Cave City.

To Fort Oglethorpe for instruction, Capt. JOHN KING FREEMAN, Louisville.

To Fort Thomas, Ky., with the board examining the command for nervous and mental diseases, Lieut. AVONIA E. KISER, Paris.

To Lakewood, N. J., for temporary duty, Lieut. JOSEPH C. MONNIER, Louisville.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Camp Dodge*, Des Moines, Ia., base hospital, from Fort Oglethorpe, Lieut. DAVID H. BUSH, Mt. Sterling.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Bellevue Hospital*, for further instruction, and on completion *to his proper station*, from Camp Logan, Major JOHN H. BLACKBURN, Bowling Green.

Louisiana

To Camp Sherman, Chillicothe, Ohio, as member of the board examining the command for tuberculosis, from Camp Shelby, Lieut. EWELL A. KLEINPETER, Thibodaux.

To Fort Oglethorpe for instruction, Lieut. ALBERT S. COOPER, Mansfield. For instruction in orthopedic surgery, from Washington, Capt. JOHN T. O'FERRALL, New Orleans.

To report to the commanding general, Philippine Department, for duty, from Camp Shelby, Lieut. HENRY C. LOCHTE, New Orleans.

The following order has been revoked: *To Fort Oglethorpe* for instruction, Capt. SAMUEL J. BAKER, Madisonville.

Maine

To Fort Oglethorpe for instruction, Lieut. LOREN F. CARTER, Bangor.

To Fort Warren, Mass., for duty, Lieut. LEO F. HALL, Lewiston.

To Markleton, Pa., for duty, from Camp Sevier, Lieut. CHARLES B. SYLVESTER, Harrison.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, from Camp Dodge, Capt. HORACE K. RICHARDSON, Bradford.

Maryland

To Aberdeen, Md., for duty, from Camp Jackson, Lieut. JAY H. STIER, Perryman.

To Army Medical School for instruction, from Camp Wheeler, Lieut. CLARENCE M. REDDIG, Baltimore.

To Camp Grant, Rockford, Ill., base hospital, Lieut. JAMES J. CHISOLM, Baltimore.

To Camp Jackson, Columbia, S. C., base hospital, Lieut. EARL H. DOEGE, Baltimore; from Camp Bowie, Lieut. HOWARD L. WHEELER, Baltimore.

To Camp Lee, Petersburg, Va., base hospital, Lieuts. VINCENT T. SHIPLEY, Baltimore; HENRY B. RICHARDSON, Windsor Hills.

To Fort McPherson, Ga., for duty, Lieut. FRANKLIN C. BLEDER, Baltimore.

To Fort Oglethorpe for instruction, Lieuts. GEORGE G. E. CROSS, CHARLES S. NEISTADT, Baltimore; WILLIAM C. CHANEY, Chaney; from Camp A. A. Humphreys, Lieut. JOSEPH E. NORRIS, Baltimore.

To Fort Sam Houston, Texas, for duty, from Fort Thomas, Lieut. HENRY E. AUSTIN, Baltimore; from New York City, Capt. FRANK N. HOFFMEIER, Hagerstown.

To New Haven, Conn., for duty, Lieuts. PAUL W. CHRISTMAN, ALBERT EISENBERG, Baltimore.

To New York City, Cornell Medical College, for instruction, and on completion *to his proper station*, from Army Medical School, Major HOWARD E. ASHBURY, Baltimore.

Massachusetts

To Boston, Mass., for consultation, and on completion *to his proper station*, from Walter Reed General Hospital, Major FREDERIC J. COTTON, Boston. Harvard Graduate School of Medicine, for instruction, Lieut. ARMIN KLEIN, Boston.

To Camp Jackson, Columbia, S. C., base hospital, Lieut. GEORGE A. CLARK, Holyoke; from Chicago, Capt. CLARENCE H. DOBSON, Conway.

To Camp Joseph E. Johnston, Jacksonville, Fla., as orthopedic surgeon, from Army Medical School, Lieut. CARL BEARSE, Boston. To examine the command for nervous and mental diseases, from Camp Shelby, Lieut. FRANCIS S. CALDICOTT, Milford.

To Camp Lee, Petersburg, Va., base hospital, from Surgeon-General's Office, Lieut. FREDERIC B. M. CADY, Cambridge. For duty, from Camp Devens, Lieut. WILILAM J. DILLON, Springfield.

To Camp Meade, Annapolis Junction, Md., base hospital, Lieut. JAMES M. McTIERNAN, Quincy.

To Camp Upton, L. I., N. Y., with the board examining the command for nervous and mental diseases, Capt. HANSOM A. GREENE, Palmer.

To Cam[illegible] *Wadsworth*, Spartanburg, S. C., base hospital, from Fort Oglethorpe, [illegible]t. JAMES R. TORBERT, Boston.

To Camp [illegible]*ary Taylor*, Louisville, Ky., base hospital, from Fort Oglethorpe, Cap[illegible] ERNEST B. YOUNG, Boston. For duty, from Camp Lee, Lieut. [illegible]ARLE H. MACMICHAEL, Malden.

To Fort McHenry, Md., for duty, from Fort H. G. Wright, Capt. FRANK A. DAVIS, Boston.

To Fort McPherson, Ga., for duty, Lieut. FREDERICK PARKER, Jr., Bedford.

To Fort Oglethorpe for instruction, Capts. ALFRED C. SMITH, Brockton; GEORGE H. MAXFIELD, Chelsea; Lieut. CARL C. PERSONS, Maynard.

To Fort Sam Houston, Texas, for duty, from Camp Beauregard, Capt. CHARLES F. CANEDY, Greenfield.

To Hoboken, N. J., for duty, from Army Medical School, Capt. ARTHUR M. WORTHINGTON, Dedham; from Camp Devens, Lieut. WILLIAM A. MONCRIEFF, New Bedford.

To Lakewood, N. J., for duty, from the Surgeon-General's Office, Major FRANCIS W. PEABODY, Cambridge; from Camp Gordon, Lieut. THOMAS McC. MABON, Boston. For temporary duty, Lieut. JOSEPH T. WEARN, Boston.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Devens*, Ayer, Mass., base hospital, Capt. JOHN HOMANS, Brookline. On completion *to Camp Upton, L. I., N. Y.*, base hospital, from Fort Oglethorpe, Lieut. EDWARD H. EWING, Stoughton.

To Washington, D. C., for consultation, and on completion to Boston, Mass., for duty, and on completion *to Cape May, N. J.*, base hospital, from Cape May, Capt. HARRY P. CAHILL, Boston. For temporary duty, and on completion *to the inactive list*, from Camp Meade, Major SAMUEL J. MIXTER, Boston.

The following order has been revoked: *To Camp Hancock*, Augusta, Ga., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. HARRY A. WALKER, Somerville.

Michigan

To Baltimore, Md., Curtis Bay, for duty, from Fort Oglethorpe, Lieut. JOHN K. BURNS, Jr., Detroit.

To Camp Custer, Battle Creek, Mich., as orthopedic surgeon, from Army Medical School, Lieut. ROBERT H. BAKER, Ann Arbor. Base hospital, Lieut. ROLAND S. CRON, Ann Arbor. For duty, Lieut. LEROY E. HULL, Detroit.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. DANIEL R. DONOVAN, Detroit.

To Camp Dix, Wrightstown, N. J., for duty, from Fort Oglethorpe, Capt. HUGH McD. BEEBE, Ann Arbor.

To Camp Grant, Rockford, Ill., for duty, from Camp Dodge, Lieut. GROVER C. WOOD, Detroit.

To Camp Greene, Charlotte, N. C., as a member of the board examining the commands for tuberculosis, from Camp Shelby, Lieut. JOHN J. MILLER, Berlin.

To Camp Hancock, Augusta, Ga., base hospital, from Fort Oglethorpe, Lieut. GORDON H. YEO, Big Rapids.

To Camp Jackson, Columbia, S. C., for duty, from Fort Oglethorpe, Lieut. WILLIAM J. KANE, Detroit.

To Camp Lee, Petersburg, Va., for duty, Lieut. JAMES M. SEVERSON, Detroit.

To Camp Meade, Annapolis Junction, Md., for duty, Capt. FLOYD W. CLEMENTS, Detroit.

To Camp Pike, Little Rock, Ark., for duty, Lieut. LEON J. GIBSON, Bay City.

To Camp Sherman, Chillicothe, Ohio, base hospital, Capt. RAYMOND D. SLEIGHT, Battle Creek.

To Camp Wheeler, Macon, Ga., with the board examining the command for cardiovasculahr diseases, from Camp Sevier, Lieut. CHARLES E. LEMMON, Detroit.

To Cape May, N. J., base hospital, from Fort Oglethorpe, Lieut. WILLIAM R. McCLURE, Detroit.

To Hoboken, N. J., for temporary duty, from New York City, Capt. EUGENE B. STEBBINS, Ironwood.

To Ithaca, N. Y., Cornell University, for duty, from Mount Clemens, Capt. ROBERT V. GALLAGHER, Battle Creek.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Camp Zachary Taylor*, Louisville, Ky., base hospital, Lieut. THOMAS E. HACKETT, Jackson.

Minnesota

To Camp Dodge, Des Moines, Ia., as a member of the board examining the troops for cardiovascular diseases, Lieut. MORSE J. SHAPIRO, Minneapolis.

To Camp Grant, Rockford, Ill., for duty, from Jefferson Barracks, Capt. EARL H. MARCUM, Bemidji; from duty as a contract surgeon, Capt. RALPH E. MORRIS, Minneapolis.

To Camp Jackson, Columbia, S. C., for duty, from Camp Sherman, Lieut. ADOLPH E. DETUNCQ, Preston.

To Camp Kearny, Linda Vista, Calif., with the board examining the command for nervous and mental diseases, from Fort Riley, Lieut. ABRAHAM F. STRICKLER, Sleepy Eye.

To Camp McClellan, Anniston, Ala., base hospital, from New York City, Lieut. PAUL S. EPPERSON, Siwabik.

To Camp Meade, Annapolis Junction, Md., for duty, from Camp Lee, Lieut. CARL C. COWIN, Minneapolis; from Camp Sherman, Lieut. JOHN J. DONOVAN, Litchfield.

To Fort Oglethorpe for instruction, Capt. THOMAS E. FLINN, Redwood Falls; Lieuts. BERNARD N. SOROSE, Detroit; THOMAS J. TRUTNA, Silver Lake; HAROLD E. HALLSICK, St. Paul.

To Fort Sam Houston, Texas, for duty, from Camp MacArthur, Lieut. DELPHIN W. KOHLER, Albany; from Camp Meade, Capt. WILLIAM V. LINDSAY, Winona.

To Fort Sheridan, Ill., as orthopedic surgeon, from Fort Oglethorpe, Capt. JAMES A. McLAUGHLIN, Minneapolis.

To Minneapolis, Minn., for duty, Capt. RALPH ST. J. FERRY, Minneapolis.

To Portland, Ore., Yeon Building, for duty, Lieut. ARTHUR A. WOHLRABE, Mankato.

To Rochester, Minn., Mayo Clinic, for [illegible] completion *to his proper station*, from Camp Dodge, [illegible]NSON, Worthington. On completion *to Camp* [illegible] Ohio, base hospital, Lieut. JOHN B. DOYLE, St. Paul.

The following order has been revoked: *To Camp Greene*, Charlotte, N. C., base hospital, from Hoboken, Lieut. JOSEPH C. MICHAEL, St. Paul.

Mississippi

To Fort Oglethorpe for instruction, Capt. JOHN R. KITTRELL, Laurel; Lieuts. CARL A. DAY, Bentonis; JESSE R. STAMPER, Decatur; ROBERT GOING, Vicksburg.

To the inactive list, from Camp Hancock, Lieut. FRANK S. HILL, Grenada.

Missouri

To Army Medical School for instruction, Lieut. BENJAMIN W. LEWIS, St. Louis.

To Camp Custer, Battle Creek, Mich., as orthopedic surgeon, from Chicago, Lieut. LEON V. URBANOWSKI, St. Louis. Base hospital, from Kansas City, Capt. CALVIN L. COOPER, Kansas City.

To Camp Devens, Ayer, Mass., base hospital, Lieuts. HUGH G. McKAY, Bangor; WILBUR K. BROWN, St. Louis.

To Camp Gordon, Atlanta, Ga., for duty, from Camp Wheeler, Lieut. WILLIAM F. MITCHELL, St. Louis.

To Camp Grant, Rockford, Ill., for duty, from Camp Custer, Lieut. FRED E. DARGATZ, Kansas City.

To Camp Jackson, Columbia, S. C., as orthopedic surgeon, from Chicago, Lieut. CHARLES F. DAVIS, Kansas City. Base hospital Lieuts. DAVID P. FERRIS, ALEXANDER C. KIRBY, St. Louis; from Camp Sherman, Capt. ORRIL LEG. SUGGETT, St. Louis.

To Camp Lewis, American Lake, Wash., for duty, from Fort Riley, Capt. OTTO L. MUENCH, Washington; Lieut. GOUGH H. TARR, Coplar; GEORGE B. PENNINGTON, West Walton.

To Camp McClellan, Anniston, Ala., base hospital, Capt. FRANK McD. DENSLOW, Kansas City.

To Camp Meade, Annapolis Junction, Md., for duty, Lieut. ALVIN H. DIEHR, St. Charles; from Fort Oglethorpe, Lieut. ERNEST M. McKENZIE, St. Louis.

To Fort McPherson, Ga., for duty, Capt. WILLIAM P. GLENNON, St. Louis.

To Fort Oglethorpe for instruction, Capt. CHARLES A. STONE, St. Louis; Lieuts. EZRA L. MEADS, *Bennets Mill;* GERHARD KAEMMERLING, Joplin; NATHAN ZOGLIN, Kansas City; KENNETH C. PEACOCK, St. Louis; GEORGE W. ELDERS, Ware.

To Fort Riley as a member of the board examining the troops for cardiovascular diseases, Lieut. FRED B. KYGER, Kansas City.

To Fort Sam Houston, Texas, for duty, from Camp Shelby, Lieut. LOGAN L. LATHAM, Latham; *from Camp Travis,* Capt. JOHN S. WEAVER, Kansas City.

To Hoboken, N. J., for duty, from Camp Wadsworth, Capt. MOYER S. FLEISHER, St. Louis.

To Moberly, Mo., for duty, and on completion *to his proper station,* from St. Louis, Major WILILAM J. LUEDDE, St. Louis.

To New Haven, Conn., for duty, Lieut. HOLLIS S. THOMAS Kansas City.

To Orono, Maine, for temporary duty in connection with the examination of drafted troops at the University of Maine, and on completion *to his proper station,* from Camp Devens, Lieut. EDWARD X. LINK, St. Louis.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, from Camp Greene, Capt. CHARLES H. HECKER, St. Louis.

Resignation of Lieut. CHARLES E. WOODY, Springfield, accepted.

Montana

To Camp Doniphan, Fort Sill, Okla., from Fort Logan, Lieut. JOHN J. TOBINSKI, Missoula.

To Camp Joseph E. Johnston, Jacksonville, Fla. as orthopedic surgeon, *from New York City, Lieut. EARL S. PORTER, Moore.*

To Camp Kearny, Linda Vista, Calif., base hospital, Lieut. JOHN L. TREACY, Helena.

To Camp Lewis, American Lake, Wash., for duty, Capt. WILLIAM G. RICHARDS, Billings.

To report by wire to the commanding general, for assignment to duty, Major FRANCIS J. ADAMS, Great Falls.

Nebraska

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieut. CHARLES W. WAY, Wahoo.

To Camp Lee, Petersburg, Va., with the board examining the troops for tuberculosis, from Camp Sevier, Lieut. TORRENCE C. MOYER, Lincoln.

To Camp Meade, Annapolis Junction, Md., for duty, Lieut. DANIEL W. JONES, Omaha.

To Camp Travis, Fort Sam Houston, Texas, as orthopedic surgeon from Chicago, Lieut. LESTER K. STRATE, Sutton.

To Chicago, Ill., Northwestern University, Medical School for instruction, from Fort Riley, Capt. FRANK L. FRINK, Newman Grove.

To Fort Des Moines, Ia., base hospital from Camp Pike, Lieut. WILLIAM R. PETERS, Stanton.

To Fort Oglethorpe for instruction, Lieuts. EARL C. MONTGOMERY, ARTHUR J. ROSS, Omaha.

Nevada

To Camp Lewis, American Lake, Wash., for duty, Lieut. CLAUDE H. CHURCH, Tenepah.

New Hampshire

To Camp Forrest, [illegible] or duty, from Philadelphia, Lieut. MELVIN P. [illegible]

To Camp Shelby, [illegible] se hospital, from New York City, Lieut. RALPH [illegible]

To Fort Oglethorpe for instruction, Lieut. ALBERT P. MULVANITY, Nashua.

To Jefferson Baracks, Mo., as a member of the board examining the command for nervous and mental diseases, Lieut. LOUIS O. S. WALLACE, Concord.

New Jersey

To Camp Jackson, Columbia, S. C., base hospital, Lieut. JOSEPH D. LATHAM, Atlantic City; from Mount Clemens, Lieut. IRVING S. INGBEA, Secaucus. For duty, from Camp Dix, Lieut. BROOKE DODSON, Penn's Grove; from Camp Shelby, Lieut. FRANK J. McLOUGHLIN, Jersey City.

To Camp Lee, Petersburg, Va., for duty, from Camp Dix, Capt. THOMAS A. CLAY, Paterson.

To Camp Meade, Annapolis Junction, Md., for duty, from Fort Oglethorpe, Lieut. BENJAMIN J. SILVERSTEIN, Newark.

To Cape May, N. J., base hospital, from Camp Dix, Capt. ELLERY N. PECK, Boonton.

To Edgewood, Md., base hospital, Lieut. JOHN J. MACDONALD, Jersey City.

To Fort Oglet [illegible] JOHN A. HOLLAND, Montclair; Lieuts. [illegible] Atlantic City; THOMAS L. CALDRONEY, [illegible] Hackensack; FREDERICK H. VON HOPE, C [illegible] AWAY, Rahway.

To Fort Riley as a member of the board examining the command for tuberculosis, from Camp Sheridan, Lieut. HOWARD S. SMITH, Newark.

To Fort Sam Houston, Texas, for instruction, and on completion *to his proper station,* from Camp Logan, Lieut. THOMAS W. HARVEY, JR., Orange.

To Fort Warren, Mass., for duty, Lieut. WILLIAM R. TILTON, South Amboy.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieut. GEORGE F. MURMANE, Passaic.

To Lincoln, Neb., University of Nebraska, for duty, from Fort Oglethorpe, Capt. ABIJAH O. BUCK, Elizabeth.

To Medford, Mass., Tufts Medical College, to make physical examinations and give medical atention to the drafted men enrolled at this institution, from Fort Oglethorpe, Lieut. ABRAHAM G. REINFIELD, Newark.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, Lieut. WILLIAM RAIM, Jersey City.

The following orders have been revoked: *To Chicago, Ill.,* for instruction, *from Fort Oglethorpe,* Lieut. ALEXANDER J. McRAE, Upper Montclair. *To Fort Oglethorpe* for duty, Lieut. ADFUR E. MAINES, Jersey City. *To Takoma Park, D. C.,* to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, and on completion *to his proper station,* from Army Medical School, Lieut. THOMAS W. CONNOLLY, Jersey City.

New Mexico

To Camp Pike, Little Rock, Ark., for duty, from Fort Riley, Lieut. ROBERT T. LUCAS, Carrizozo.

To Fort Oglethorpe for instruction, Lieut. GEORGE V. HACKNEY, Magdalena.

New York

To Army Medical School for instruction, Lieuts. GEORGE P. McNEILL, JR., WALTER VAN O. MOORE, New York; from Fort Sam Houston, Lieut. ROBERT BOGAN, New York; from Fort Slocum, Lieut. JOHN L. HEMSTEAD, Albany.

To Biltmore, N. C., for temporary duty, Lieut. LYMAN H. WHEELER, Lockport.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, Capt. JOSEPH L. BENDELL, Albany.

To Camp Dix, Wrightstown, N. J., base hospital, from Camp Pike, Capt. RAE W. WHIDDEN, New York. For duty, from Camp Devens, Lieut. JAMES F. DOUGHERTY, Brooklyn; from Camp Upton, Capt. FREDERIC N. WILSON, New York; Lieuts. ARTHUR C. SMITH, Elmira; IRA W. LIVERMORE, Gowanda; from Chanute Field, Lieut. LINN V. H. REED; from New York, Lieut. BERNARD S. STRAIT, Penn Yan.

To Camp Doniphan, Fort Sill, Okla., for duty, from Fort Logan, Lieut. GEORGE W. BATT, Kennedy.

To Camp Gordon, Atlanta, Ga., with the board examining the command for nervous and mental diseases, from Camp Hancock, Capt. EMIL ALTMAN, New York; Lieut. DANIEL J. SWAN, Flushing.

To Camp Grant, Rockford, Ill., for duty, from New York, Lieut. CALVIN B. WITTER, Schenectady.

To Camp Jackson, Columbia, S. C., base hospital, Lieuts. ABRAHAM KARDINER, JEROME L. KOHN, WILLIAM C. MACDONALD, New York. For duty, from Camp Bowie, Lieut. SAMUEL W. HAUSMAN, Ogdensburg; from Camp Gordon, Lieut. HARRY GOLDMANN, Long Island City; from Camp Meade, Lieut. HAROLD J. McDONALD, Buffalo. With the board examining the troops for cardiovascular diseases, from Camp A. A. Humphreys, Lieut. JOHN L. BYRNES, Hudson Falls.

To Camp Joseph E. Johnston, Jacksonville, Fla., as orthopedic surgeon, from Army Medical School, Lieut. GEORGE E. BLUE, New York. To examine the comand for nervous and mental diseases, from Camp Shelby, Lieut. HYMAN HERSHBERG, New York.

To Camp Lee, Petersburg, Va., for duty, from Camp Dodge, Lieut. JOSEPH L. McGOLDRICK, Brooklyn; from Fort McPherson, Lieut. WILLIAM P. McCROSSIN, New York; from Fort Oglethorpe, Lieut. DANIEL P. GILLESPIE, New York.

To Camp Meade, Annapolis Junction, Md., base hospital, from Army Medical School, Lieut. ETHELBERG A. CALLAGHAN, Brooklyn. For duty, Lieut. ABRAHAM LEIBOVITZ, New York; from Camp Wadsworth, Lieut. THOMAS J. LUBY, New York.

To Camp Raritan, Metuchen, N. J., for duty, from Fort Oglethorpe, Lieut. THOMAS M. CALLADINE, Perry.

To Camp Sevier, Greenville, S. C., for duty, from *Camp Jackson,* Capt. ARTHUR M. GREENWOOD, New York.

To Camp Sheridan, Montgomery, Ala., base hospital, Capt. THOMAS H. CURTIN, New York.

To Camp Sherman, Chillicothe, Ohio, as a member of the board examining the command for tuberculosis, from Fort Riley, Lieut. CARL G. FROST, Buffalo.

To Camp Wadsworth, Spartanburg, S. C., for duty, Lieut. MATTHEW A. LIOTTA, New York; from Fort Myer, Lieut. BENJAMIN RABBINER, Brooklyn; from Fort Oglethorpe, Lieut. HAROLD MACM. JOHNSON, Friendship.

To Camp Wheeler, Macon, Ga., base hospital, from Fort Oglethorpe, Capt. JOHN C. HOWARD, Blackwell's Island; *from Fort Screven,* Lieut. PERCY L. DODGE, Poughkeepsie.

To Camp Zachary Taylor, Louisville, Ky., for duty, from Walter Reed General Hospital, Capt. MAURICE B. BARNETTE, Watertown.

To Cape May, N. J., base hospital, Capt. LEE M. FRANCIS, Buffalo; from Camp Beauregard, Lieut. JAMES C. SULLIVAN, Buffalo.

To Fort Benjamin Harrison with the board *examining* the troops for tuberculosis, from New Haven, Lieuts. MORRIS A. SAGOWITZ, EDWIN F. SAMPSON, New York.

To Fort Leavenworth, Kansas, for duty, Lieut. DANIEL JUNG, Buffalo.

To Fort McHenry, Md., base hospital, from Newport News, Lieut. JAMES D. MILLER, New York.

To Fort McPherson, Ga., for duty, from Mineola, Capt. THEODORE S. WEST, Yonkers.

To Fort Myer, Va., for duty, Capt. EDWARD B. FINCH, New York.

To Fort Oglethorpe for instruction, Lieuts. RAY H. BECHTELL, Blackwell's [illegible] CK, ALFRED R. STEPHANY, WALTER F [illegible] FRANCIS M. KUJAWA, Buffalo; HERMAN [illegible] I. JOY, WILLIS W. LASHER, HAROLD V [illegible] O'NEILL, JAMES W. SMITH, DONALD J [illegible] W. TRACEY, AARON WEINBERG, New York; CLYDE L. McNEIL, Poughkeepsie; FRANCIS J. ROBINSON, Rochester; WILLIAM W. WOGLOM, Rome; HERMAN E. OAK, South Onondaga.

To Fort Porter, N. Y., for duty, from Camp Devens, Capt. CLARENCE H. MACKEY, Lancaster.

To Fort Sam Houston, Texas, for duty, from Camp MacArthur, Lieut. RAYMOND T. POTTER, Ellenville.

To Fort Thomas, Ky., for investigation, and on completion *to his proper station,* Major RICHARD H. HUTCHINGS, Ogdensburg.

To Hoboken, N. J., base hospital, Lieut. MAURICE A. BARNARD, Rochester. For duty, Lieut. LEO SIMTBAUM, Brooklyn; from Fort Oglethorpe, Lieuts, WILLIAM LIEBERMAN, Jamaica; ALFA V. SALOMON, CHARLES O. TERESI, New York.

To Lakewood, N. J., for temporary duty, Lieuts. SAMUEL KAHN, JOHN J. H. KEATING, DANIEL SCHULTKEIS, New York.

To Mineola, L. I., N. Y., Hazelhurst Field, Signal Corps Aviation School, for duty, Lieut. ROBERT BURLINGTON, New York.

To New Haven, Conn., for duty, Lieuts. JOHN J. RANDALL, Albany; JAMES H. STYGALL, Buffalo; BERNARD R. KELLEY, HARRY J. SEIFF, New York.

To Newport News, Va., with the board examining the command for nervous and mental diseases, Lieut. ABRAHAM C. SILVERMAN, Syracuse.

To Rockefeller Institute for instruction in bacteriology, and on completion *to Army Medical School, for duty,* Lieut. JOHN R. HOLDERNESS, New York. For instruction in the treatment of infected wounds, and on completion *to Camp Custer,* Battle Creek, Mich., base hospital, Lieut. EDWARD J. HYLAND, Jamaica. On completion *to Camp Devens,* Ayer, Mass., base hospital, Lieut. WILLIAM J. GALVIN, Oswego. On completion *to Camp Sevier,* Greenville, S. C., base hospital, Capt. THOMAS A. KENYON, New York. On completion *to Fort McPherson, Ga.,* for temporary duty, Lieut. ALEXANDER A. BERSIN, *Brooklyn.* On completion *to Walter Reed General Hospital* for temporary duty, Capt. FRANK E. BROWN, Brooklyn; Lieut. FRANK B. ORR, New York.

To Washington, D. C., for temporary duty, and on completion *to his proper station,* from Army Medical School, Lieuts. ROBERT A. CORBIN, New York; BENJAMIN J. SLATER, Rochester.

The following orders have been revoked: *To Army Medical School* for instruction, and on completion *to Boston, Mass.,* Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Lieut. PORTER A. STEELE, *Buffalo. To Fort Oglethorpe* for instruction, Lieuts. JULIUS RYBACK, WALTER F. WATTON, Brooklyn. *To Newport News, Va.,* for duty, Lieut. PHILIP B. BREGMAN, New York. *To Philadelphia, Pa.,* University Hospital, and on completion *to Camp Greene,* Charlotte, N. C., base hospital, Capt. GEORGE W. CONTERNO, New York.

North Carolina

To Camp Jackson, Columbia, S. C., for duty, from Fort Oglethorpe, Lieut. STEPHEN J. HAWES, Dover.

To Camp Lee, Petersburg, Va., *for duty, Capt.* PARKS McC. KING, Charlotte; from Fort Oglethorpe, Capt. BENJAMIN K. HAYS, Oxford; CLARENCE LaF. WILSON, Lenoir.

To Camp Wadsworth, Spartanburg, S. C., *for duty,* Capt. VANN McK. LONG, Winston-Salem.

To Fort Bayard, N. M., for duty, from Camp Beauregard, Lieut. RANDOLPH E. WATTS, Oriental.

To Fort Oglethorpe for instruction, Lieut. ROWLAND McN. LANCASTER, St. Pauls.

To Fort Sam Houston, Texas, for duty, from Camp Sevier, Lieut. HUGH A. THOMPSON, Raleigh.

To New Haven, Conn., for duty, Capt. THOMAS P. CHEESBOROUGH, Asheville.

North Dakota

To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. EDMUND C. STUCKE, Garrison.

To Camp Lee, Petersburg, Va., for duty, Capt. MORELAND R. IRBY, Lankin.

To Camp Lewis, American Lake, Wash., base hospital, from Portland, Lieut. WILLIAM P. BALDWIN, Castleton.

To Fort Oglethorpe for instruction, from Fort Des Moines, Lieut. EDWIN L. GOSS, Carrington.

To Fort Riley, base hospital, from New York, Lieut. JOHN R. PENCE, Minot.

The following order has been revoked: *To Portland, Ore.,* for duty, from Camp Greene, Lieut. HARLEY D. NEWBY, Parker.

Ohio

To Camp Devens, Ayer, Mass., base hospital, Lieut. RUDOLPH J. GIESELER, Cincinnati. For duty, from Fort Oglethorpe, Lieuts. WILLIAM L. FOX, Akron; FRANCIS E. DENMAN, Dayton.

To Camp Dix, Wrightstown, N. J., for duty, from Fort Oglethorpe, Major WILLIAM H. LEET, Conneaut.

To Camp Gordon, Atlanta, Ga., with the board examining the command for cardiovascular diseases, Lieut. HIRAM B. WEISS, Cincinnati.

To Camp Pike, Little Rock, Ark., with the board examining the troops for cardiovascular diseases, from Camp Beauregard, Lieut. CLYDE H. CHASE, Cleveland.

To Camp Sherman, Chillicôthe, Ohio, base hospital, Major CLARENCE KING, Avondale.

To Camp Wheeler, Macon, Ga., base hospital, from Fort Oglethorpe, Lieut. HAROLD E. FRUTH, Muscatine.

To Camp Zachary Taylor, Louisville, Ky., for duty, from Camp Sherman, Capt. WALTER B. TURNER, Youngstown; from Camp Wadsworth, Lieut. DONALD DeC. SLURA, La Rue.

To Cape May, N. J., base hospital, from Camp Beauregard, Lieut. SAMUEL ZIELONKA, Cincinnati; from Camp Grant, Capt. JOSEPH E. PIRRUNG, Cincinnati.

To Chicago, Ill., Northwestern University, for instruction, from Fort Riley, Lieut. RAY B. BOWEN, Toledo.

To Fort Benjamin Harrison for duty, from Fort Oglethorpe, Capt. DANIEL C. MOOR, *Toledo.*

To Fort Des Moines, Iowa, for duty, from Camp Grant, Major FREDERICK C. HERRICK, Cleveland.

To Fort Oglethorpe for instruction, Capts. ALVA E. SNYDER, Bryon; OWEN C. REES, Toledo; Lieuts. FRED K. READ, Akron; JOHN EUGENE TALBOTT, Alger; BARRON JOHNS, FRANK J. SAUER, Cincinnati; LESTER W. KRAUSS, VASCO E. M. OSORIA, Cleveland; FRANK E. MILLER, Wauseon; WALLACE A. ORT, Springfield; WALTER I. JENKINS, St. Paris; MARK C. HOUSTON, Urbana.

To Newport News, Va., for temporary dutyy, from Army Medical School, Lieut. CLARENCE W. BETZNER, Cincinnati.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Camp Grant,* Rockford, Ill., base hospital, Lieut. LORIN G. SHEETS, Cleveland.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Wadsworth,* Spartanburg, S. C., base hospital, Major FRED FLETCHER, Columbus.

Oklahoma

To Camp Custer, Battle Creek, Mich., as orthopedic surgeon, from Chicago, Lieut. WALTER E. KOPPENBRINK, Bartlesville.

To Camp Jackson, Columbia, S. C., for duty, Lieut. CLIFFORD B. MANDEVILLE, *Bartlesville.*

To Camp Lewis, American Lake, *Wash.,* for duty, from Fort Riley, Lieut. DAVID A. BEARD, Westville.

To Camp Meade, Annapolis Junction, Md., for duty, from Fort Des Moines, Capt. LEWIS E. EMANUEL, *Chickasha.*

To Camp Pike, Little Rock, Ark., for duty, Capt. HARRY E. BREESE, Henryette; VIRGIL H. BARTON, McAlester.

To Camp Shelby, Hattiesburg, *Miss.,* base hospital, Lieut. EDWARD F. STROUD, Tulsa.

To Fort Oglethorpe for instruction, *Lieuts.* ARTHUR E. HALE, Alva; HENRY S. DRUMMOND, Hailyville; ARTHUR F. HOBBS, Hinton; CHARLES C. SHAW, WILL C. WHIT, McAlester; CARL L. McCALLUM, Sapulpa; VICTOR M. GORE, *Taloga;* RALPH A. WORKMAN, Woodward.

To Fort Sam Houston, Texas, for duty, from Camp MacArthur, Major ROBERT M. HOWARD, Oklahoma City.

To Jackson Barracks, La., for duty, Lieut. HAROLD C. BRADLEY, Oklahoma City.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Camp Gordon,* Atlanta, Ga., base hospital, Capt. HORACE REED, Oklahoma City.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Greene,* Charlotte, N. C., base hospital, Capt. JOHN H. WHITE, Muskogee.

Oregon

To Camp Lewis, American Lake, Wash., base hospital, Lieut. FRANK P. FIREY, Portland. For duty, Capt. *CYLDE T.* HOCKETT, Enterprise; Lieuts. ROBERT W. STEARNS, Medford; JOHN W. McCOLLOM, Portland; RUDOLPH E. *KLEINSORGE,* Silverton.

To Camp Meade, Annapolis Junction, Md., for duty, from Fort Des Moines, Lieut. RICHARD F. JAMES, Portland.

To Camp Pike, Litle Rock, Ark., for duty, from Fort Riley, Lieut. SAM F. LEFEVRE, Bridal Veil.

To Camp Zachary Taylor, Louisville, Ky., for duty, from Camp Lewis, Capt. EUGENE W. ROCKEY, Oswego.

To Fort Oglethorpe for instruction, Capt. CLARENCE J. McCUSKER, Portland.

Pennsylvania

To Army Medical School for instruction, *Lieuts.* WHITMAN C. McCONNELL, Erie; GEORGE M. UNDERWOOD, Philadelphia; from Camp McClellan, Lieut. GEORGE A. *BROWN, Philadelphia;* from Camp Pike, Lieut. JOHN M. WELCH, Philadelphia. On completion *to Boston, Mass.,* Harvard Graduate School of Medicine, *for instruction,* from Camp Gordon, Lieut. JOHN P. MAUS, Philadelphia.

To Camp A. A. Humphreys, Accotink, Pa., base hospital, *from Army* Medical School, Lieut. ROBERT D. SPENCER, Philadelphia; FRED B. HARRINGTON, *Pittsburgh. For duty,* from Camp Wadsworth, Capt. SIGMAN L. GANS, Philadelphia.

To Camp Devens, Ayer, Mass., *base hospital, Lieuts.* FRANK D. LEVY, Philadelphia; HAROLD F. MOFFITT, Pittsburgh.

To Camp Dix, Wrightstown, N. J., *base hospital, from Rockefeller* Institute, Lieut. DAVID B. HAWKINS, Philadelphia. *For duty,* from Camp Meade, Capt. HARRY S. CARMANY, Philadelphia.

To Camp Dodge, Des Moines, Iowa, as orthopedic surgeon, Lieut. AUSTIN L. CORT, Wilson.

To Camp Grant, Rockford, Ill., for duty, from Camp Dodge, Lieut. *JOHN P. DUGGAN,* Pittsburgh; from Camp Jackson, Lieut. WILLIAM M. DONOVAN, *Philadelphia. With the board examining the troops* for cardiovascular diseases, from Jefferson Barracks, Lieut. THOMAS G. JENNY, Pittsburgh.

To Camp Jackson, Columbia, S. C., base hospital, Lieuts. WALTER R. LIVINGSTON, Philadelphia; OWEN H. BINKLEY, HARRY A. HOLLAND, JAMES S. LOGAN, JAMES M. MILLER, Pittsburgh. For duty, from Camp Cody, Lieut. LOUIS S. WEAVER, York; from Camp Sevier, Capt. ARTHUR E. DAVIS, *Scranton. With the board* examining the troops for cardiovascular diseases, from Lakewood, Major EDWARD H. GOODMAN, *Philadelphia.*

To Camp Pike, Litle Rock, Ark., for duty, from Fort Oglethorpe, Lieut. ALBERT T. RANSOME, Philadelphia.

To Camp Sevier, Greenville, S. C., for temporary duty, from Army Medical School, Lieut. FRANCIS B. KING, Lansdowne.

To Camp Sherman, Chillicothe, Ohio base hospital, from Camp Jackson, Lieut. FRANCIS V. LAURENT, Pittsburgh. With the board examining the troops for cardiovascular diseases, from Fort Thomas, Ky., Capt. JOSEPH H.. BARACH, Pittsburgh.

To Camp Wadsworth, Spartanburg, S. C., for duty, Lieuts. JOSEPH H. WATSON, Jeanette; MAJOR H. JOSEPH, Philadelphia; from Fort Oglethorpe, Capt. EDWARD L. DAVIS, Berwick; Lieut. HENRY N. SCHOLL, Kulpsville.

To Dover, N. J., for duty, from Williamsbridge, Lieut. JOHN J. KOLSKI, Donora.

To Fort Benjamin Harrison, with the board examining the troops for tuberculosis, from New Haven, Lieut. JULIUS H. GOLDSTEIN, Pittsburgh.

To Fort Clark, Texas, for duty, from Fort Oglethorpe, Lieut. BOYD W. SCHAFFNER, Ellwood.

To Fort McPherson, Ga., for duty, Capt. SAMUEL D. INGHAM, Huntington Valley.

To Fort Oglethorpe for instruction, Capts. LU VAN L. BROWN, Castle Shannon; GEORGE W. SMELTZ, Markleton; MADISON U. STONEMAN, Pittsburgh; Lieuts. HERBERT S. McKINSTRY, *North* Wales; JOSEPH V. BURNS, Coaldale; LOUIS J. LIVINGOOD, Philadelphia; RALPH J. ASKIN, SAMUEL H. KELLER, JOHN R. MORGAN, NORMAN O. OSCHSENHIRT, BYRON E. SHAW, Pittsburgh; ROY L. LANGDON, Willow Grove; from Camp *A. A. Humphreys,* Lieut. JULIUS A. BLASSER, Philadelphia; from Camp Meade, FRANCIS L. ALEXITIS, Wilkes-Barre; from Pittsburgh, *Lieut.* NICHOLAS G. L. SHILLITO.

To Fort Sam Houston, Texas, for duty, from Camp Sevier, Lieut. JOHN W. THOMPSON, Selinsgrove.

To Hoboken, N. J., for duty, from Fort Oglethorpe, *Lieuts.* ALEXANDER W. SPEARS, Grindstone; CHARLES H. WOLFE, Pittsburgh; from New York City, Major EVAN W. *MEREDITH,* Pittsburgh.

T[illegible] r duty, from Camp Leach, Lieut. MICHAEL M. [illegible]

T[illegible] for duty, Lieuts. WILLIAM D. STROUD, Philadelphia; MORRIS [illegible]IRSHMAN, Pittsburgh; from Camp Gordon, Lieut. LESLIE N. GAY, Shamokin.

To Lonoke, Ark., Eberts Field, for duty, from Camp Jackson, Capt. HARRISON A. GREAVES, Philadelphia.

To New York City, Neurological Institute, for intensive training, Lieuts. HENRY B. MIKELBERY, ABRAHAM M. ORNSTEIN, Philadelphia.

To Pittsburgh, Pa., Carnegie Building, for instruction, and on completion *to Camp Sherman*, Chillicothe, Ohio, base hospital, Lieut. GORSHON GINSBURG, Philadelphia.

To report to the commanding general, Philippine Department, for duty, from Camp Shelby, Capt. WILLIAM RUOFF, Philadelphia.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Camp Dodge*, Des Moines, Iowa, base hospital, from Fort Oglethorpe, Capt. HARRY A. SPANGLER, Carlisle.

To Rockefeller Institute for instruction, and on completion *to Fort Oglethorpe*, from New York City, Lieut. JOHN D. DONNELLY, Philadelphia. For instruction in laboratory work, from Camp Logan, Lieut. THEODORE MELNICK, Philadelphia. For instruction in the treatment of infected wounds, and on completion *to Camp Meade*, Annapolis Junction, Md., base hospital, Lieut. EDWARD S. DILLON, Philadelphia. On completion *to Walter Reed General Hospital* for temporary duty, Lieut. EDWARD N. HAGIN, Sharon.

To West Lafayette, Ind., Purdue University, to make physical examinations and give medical attention to the drafted men enrolled at this institution, and on completion *to his proper station*, from Fort Oglethorpe, Capt. HARRY BRADY, Masontown.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. ADOLPH H. FRIEDMAN, Philadelphia.

Porto Rico

To Camp Las Casas, San Juan, P. R., for duty, Capt. ALBERT G. MEHRHOF, Guayama; Lieut. LOUIS P. DAME, San Juan; from Camp Colt, Lieut. MANUEL DIAZ GARCIS, Barceloneta.

Rhode Island

To Fort Oglethorpe for instruction, Lieut. THOMAS S. FLYNN, Woonsocket.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School* for duty, Capt. WILLIAM G. DWINNELL, Providence.

The following order has been revoked: *To Cape May, N. J.*, base hospital, Lieut. FREDERICK N. BIGELOW, Providence.

South Carolina

To Camp [illegible], S. C., for duty, Lieut. RALPH K. FOSTER. [illegible] Fort Myer, Lieut. WILLIAM E. WHITESIDE, [illegible]

To Fort Oglethorpe for instruction, Lieut. JAMES E. DOUGLASS, Winnsboro.

South Dakota

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieut. LAWRENCE J. BROOKMAN, Vermilion.

To Camp Custer, Battle Creek, Mich., base hospital, from Milwaukee, Lieut. CARL N. HARRIS, Wilmot.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Camp Grant*, Rockford, Ill., base hospital, Lieut. ARTHUR F. GROVE, Dell Rapids.

Tennessee

To Boston, Mass., Franklin Union Institute, for duty, from Fort Oglethorpe, Capt. THOMAS E. P. CHAMBERS, Cleveland.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Oglethorpe, Lieut. YOURA S. BROWN, Halls.

To Camp Lee, Petersburg, Va., for duty, Lieut. BENJAMIN J. COGDILL, Vestal; from Fort Oglethorpe, Lieut. JOHN H. HUFF, Seviersville.

To Camp Pike, Little Rock, Ark., with the board examining the command for cardiovascular diseases, Capt. OVAL N. BRYAN, Nashville.

To Camp Wadsworth, Spartanburg, S. C., for duty, Lieuts. LEROY S. McMULLEN, Knoxville; WALTER L. BOSWELL, Macon; from Fort Oglethorpe, Lieut. CHESTER A. SKELTON, St. Eline.

To Fort Oglethorpe for instruction, Capt. JOHN J. McSWAIN, Paris; Lieuts. SPENCER B. McCLARY, Benton; GEORGE T. WILHEM, Memphis.

To Indianapolis, Ind., to give medical attention to drafted men, from Fort Oglethorpe, Lieut. WILLIAM T. BUCK, Henderson.

To Waynesville, N. C., for duty, from Camp Sevier, Lieut. JOHN O. WOODS, Newport.

Texas

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, *from Fort Oglethorpe, Capt.* HOWARD R. DUDGEON, *Waco.*

To Camp Dix, Wrightstown, N. J., for duty, from Camp Logan, Capt. WALTER C. JOHNSON, Pharr; from Camp Travis, Capt. BERNARD F. SMITH, San Antonio.

To Camp Jackson, Columbia, S. C., base hospital, from San Antonio, Lieut. EDWARD B. JONES, Jacksonville.

To Camp Kearny, Linda Vista, Calif., base hospital, from Camp Logan, Capt. EUGENE R. CARPENTER, El Paso.

[illegible] Texas, base hospital, Lieut. SCOTT C. [illegible]

[illegible] Junction, Md., for duty, from Camp Cody, Lieut. ERNEST H. HAMILTON, Kilgore.

To Camp Travis, Fort Sam [illegible] Lieuts. THOMAS C. BREWER, Dall[illegible] Houston. With the board examining the troops for cardiovascular diseases, Lieut. DAVID W. CARTER, JR., Georgetown.

To Camp Wheeler, Macon, Ga., base hospital, from Camp Crane, Capt. GEORGE C. BRUNNELLE, El Paso.

To Fort Leavenworth, Kan., for duty, Capt. WILBUR F. THOMSON, Beaumont; Lieut. GEORGE C. KINDLEY, Dallas.

To Fort Oglethorpe for duty, from Fort McPherson, Lieut. CLARENCE R. MILLER, San [illegible] REDERICK O. WAAGE, El Paso; [illegible] YD SWONGER, Beaumont; JAMES [illegible] P. GIBBS, Houston; Lieuts. OSCA[illegible] MACUNE, Hillsboro; SIMM H. M[illegible] EDWARD C. MURRAY, *Houston*; JOHN W. BLAKE, Rosenberg; WILLIAM S. HANSON, WILLIAM B. URMSTON, San Antonio.

To Fort Riley, base hospital, Lieut. ROGER A. THARP, Austin.

To Fort Sam Houston, Texas, base hospital, from Camp Bowie, Major JAMES G. FLYNN, Fort Crockett; from Camp Beauregard, Lieut. COLEMAN J. CARTER, Oakwoods.

To Montgom[illegible]ation School, for duty, from Mineola, Capt. [illegible] Dallas.

To New Yor[illegible] for instruction, and on completion *to Cam*[illegible]n, Md., base hospital, Major HERSCHEL F. CONNELLY, Waco.

Utah

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, *from Fort Riley, Lieut.* CHARLES E. BRAIN, *Salt Lake City.*

To Fort Logan, Colo., for duty, from Fort H. G. Wright, Lieut. GEORGE W. CLARKE, Springville.

Vermont

To Camp Kearny, Linda Vista, Calif., with the board examining the command for nervous and mental diseases, from San Francisco, Capt. SIDNEY M. BUNKER, Burlington.

To Camp [illegible] duty, from Fort Oglethorpe, Lieut. JAMES L. [illegible] Depot. *To Fort McPherson, Ga.*, for duty, Li[illegible]LOR, Burlington.

To Fort Oglethorpe for instruction, Lieut. DAVID R. BROWN, Lindowville.

To Indianapolis, Ind., to give medical attention to the drafted men, from Fort Oglethorpe, Capt. *NICHOLAS DELEHANTY, Rutland.*

Virginia

[illegible] S. C., *for duty, from Camp Zachary* [illegible]ST, Portsmouth.

[illegible] Va., base hospital, Lieut. MATHIAS [illegible] for duty, from Fort Oglethorpe, Lieut. CLAY M. EASTER, Chincoteague Island.

To Camp MacArthur, Waco, Texas, with the board examining the command for nervous and mental diseases, from Camp Gordon, Lieut. JAMES A. MERIWETHER, Holcombs Rock.

To Camp Zachary Taylor, Louisville, Ky., for duty, from Camp Lee, Capt. HENRY S. STERN, Richmond.

To Fort Oglethorpe for instruction, Capt. HARRY WALL, Claremont; Lieut. WILLIAM I. LAUGHON, Richmond.

To Hoboken, N. J., for temporary duty, from Camp Meade, Lieut. ROBERT S. PRESTON, Richmond.

To Washington, D. C., for temporary duty in the Surgeon-General's Office, from Fort Oglethorpe, Capt. LEWIS M. ALLEN, Gaylord.

Washington

To Alcatraz, Calif., for duty, from Camp Fremont, Capt. FRANK H. COLLINS, Goldendale.

To Camp Lewis, American Lake, Wash., as a member of the board *examining the command for tuberculosis*, Lieut. CHARLES D. HUNTER, Tacoma.

To Fort Sam Houston, Texas, for duty, from Camp Sheridan, Lieut. WALTER A. BURG, Uniontown.

To Hoboken, N. J., base hospital, from Fort Lawton, Major CHARLES A. BETTS, Fort Lawton.

To Rock Island, Ill., for duty, from Fort Riley, Lieut. LEGRAND SPAULDING, Kennewick.

To San Francisco, Calif., for instruction, and on completion *to his proper station*, from Camp Lewis, Capt. HENRY H. SLATER, Deer Park.

West Virginia

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Camp Pike, Capt. EMERSON MEGRALL, Wheeling.

To Camp Greene, Charlotte, N. C., base hospital, Lieut. CHARLES F. MAHOOD, Alderson; ROBERT J. WILKINSON, Huntington.

To Camp Lee, Petersburg, Va., base hospital, Lieut. ROBERT J. WILKINSON, Huntington. With the board examining the troops for tuberculosis, from Camp Sevier, Lieut. FERDINAND W. WIEHE, Wheeling.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Fort Oglethorpe, Capt. WILLIAM C. COVEY, Pemberton.

[illegible] for instruction, Lieuts. ETLEY P. SMITH, [illegible] S. FLEMING, CLAUDE M. VAUGHAN, [illegible]SKINS, Lillybrook; LUSIUS LAMAR, Minne[illegible]ny Medical School, Lieut. JOHN E. MILLER, Widen.

To Fort Porter, N. Y., for duty, Capt. CHARLES A. BARLOW, Beverley.

Wisconsin

To Camp Dix, Wrightstown, N. J., for duty, Lieut. JUSTUS SUTHERLAND, Brodhead.

[illegible] Ill., for duty, from Camp Logan, Capt. [illegible]aukee.

[illegible]ia, S. C., for duty, Lieut. HENRY H. [illegible], Madison, from Camp Dodge, Lieut. THOMAS C. CLARKE, Oconto.

[illegible] Annapolis Junction, Md., for duty, from Camp [illegible] WILLIAM N. MOORE, Appleton.

[illegible]tle Rock, Ark., for duty, from Fort Riley, Capt. [illegible]D, Janesville.

[illegible] for instruction, Lieuts. LEO. A. HOFFMAN, [illegible]H B. QUINN, Darlington; LAUREL E. YOUMAN, Mukwonago; CHARLES C. DAVIN, New Richmond; DE WAYNE TOWNSEND, Oconomowoc; from Fort Myer, Lieut. CLARENCE N. SONNENBURG, Sheboygan.

To Lakewood, N. J., for temporary duty, Lieut. EUGENE A. GATTERDAM, La Crosse.

To report to the comanding general, Philippine Department, for duty, from Camp Cody, Capt. GEORGE A. BADING, Milwaukee.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Camp Sheridan*, Montgomery, Ala., base hospital, Lieut. GEORGE M. SMITH, Chippewa Falls. On completion *to Camp Zachary Taylor*, Louisville, Ky., base hospital, Lieut. ANTHONY H. LOOZE, Brodhead.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Sevier*, Greenville, S. C., base hospital, Capt. THOMAS F. SHINNICK, Beloit.

Wyoming

To Camp Fremont, Palo Alto, Calif., as orthopedic surgeon, from Chicago, Lieut. ROBERT H. SANDERS, Kemmerer.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest; such as relate to society activities, new hospitals, education, public health, etc.)

ILLINOIS

Service Flag Unfurled.—At the meeting of the Vermilion County Medical Society, at Danville, June 4, a service flag bearing seventeen stars was dedicated. The principal address was delivered by Dr. Elmer B. Cooley, Danville, formerly president of the Illinois State Medical Society.

Continuous Term for Medical School.—The University of Illinois College of Medicine, announces that, beginning June 3, it will be operated on the quadrimester system of three terms of four months each per calendar year. The courses will be so arranged that the students may enter the school at the beginning of any of the three terms.

Women's Club Election.—At the annual meeting of the Medical Women's Club, June 19, the following officers were elected: president, Dr. May Cushman Rice; vice presidents, Drs. Katherine B. Rich and Clara Jacobson; secretary, Dr. Grace H. Campbell; treasurer, Dr. Ione F. Beem, and editor of the *Bulletin*, Dr. Sadie Bay Adair, all of Chicago.

Chicago

Annual Meeting of Physicians' Club.—At the annual meeting of the Physicians' Club of Chicago the following officers were elected: chairman, A. A. O'Neill; secretary, V. D. Lespinasse; treasurer, H. W. Cheney; directors, E. J. Doering, D. N. Eisendrath, O. W. McMichael and A. M. Corwin. The closing function of the year was a banquet in honor of Major-General Gorgas, at which representatives of the various departments of the Army were speakers.

Extending Infant Welfare Work.—Four new infant welfare stations will be established in Chicago as the result of the money-raising campaign during the recent baby week, when $67,000 was raised, $2,000 more than the goal set. Heretofore, only children under 2 years have been cared for at the stations, but it is hoped that the resources will soon allow an extension of the work to include children under 6 years. There are now twenty-two infant welfare stations. The increase will make the number twenty-six.

INDIANA

Ground Broken for Medical School.—The first ground was broken for the new $238,000 building of the Indiana University School of Medicine, on the ground of the Robert W. Long Hospital, Indianapolis, June 17, by Governor Goodrich, who also made the principal address.

Personal.—Dr. Marcus Ravdin, Evansville, has presented Indiana University with a gold medal to be given annually to the student of the medical department who attains the greatest proficiency during his four years' course.—Dr. Herman G. Morgan, secretary of the Indianapolis Board of Health, has been appointed superintendent of the city hospital, succeeding Dr. Thomas L. Sullivan, who has entered military service.

MAINE

Personal.—Dr. Leverett D. Bristol, Augusta, commissioner of the state department of health, has been designated as chairman of the state committee of the American Society for the Control of Cancer.

New State Officers.—At the annual meeting of the Maine Medical Association held in Portland, June 4 to 6, the following officers were elected: president, Dr. George H. Coombs, Waldoboro; vice presidents, Drs. John Sturgis, Auburn, and Charles W. Bell, Strong; secretary-treasurer, Dr. Bertram L. Bryant, Bangor, and councilor delegates, Drs. John F. Thompson, Portland; Ernest V. Call, Lewiston; Byron F. Barker, Bath; Oliver W. Turner, Augusta; Walter N. Miner, Calais, and Charles H. Burgess, Bangor.

MARYLAND

Fifth Case of Infantile Paralysis.—The health department announced recently that a suspect under observation for the past week had developed a genuine case of infantile paralysis. The patient is a Polish infant, 2 years old, living near t waterfront in southeast Baltimore. The child has paralys of the right shoulder and weakness in the right leg. It is mild attack and the fifth case of the disease to be reported i the city this year.

Flag Raising at U. S. Army General Hospital No. 7.— flag donated by the workmen engaged in the construction o the new buildings at the U. S. Army General Hospital No. 7 Evergreen, Baltimore, which is for the treatment and training of soldiers blinded in service, was raised during the past week on the observation tower commanding a view of the grounds. Capt. Francis E. Chuney, a member of the hospital staff, supervised the arrangements.

Personal.—Dr. C. Frank Jones, health warden of the fifteenth ward is convalescent after an operation performed at St. Joseph's Hospital a short time ago.——Mrs. Agnes C. Hartridge, formerly superintendent of nurses at University Hospital, Augusta, Ga., has been placed in charge of the admitting office at Johns Hopkins Hospital, succeeding Dr. William C. Leavenworth, who has been given supervision of the hospital dispensary. Dr. Leavenworth in his turn succeeded Dr. L. Palmer Holmes, New York City, who has entered military service.——Dr. Cornelius De Weese, Laurel, was acquitted, June 6, of criminal blame in connection with the death of Ambler McManus, Marlboro, who died as the result of injuries sustained when he was struck by an automobile driven by Dr. De Weese.——Dr. Edward P. Smith, for five years general superintendent of the Mercy Hospital, has resigned and will engage in practice in Baltimore.——The health department has appointed Dr. William Dew assistant supervisor of pasteurization in place of Dr. Claude van Bibber, resigned.——Dr. George A. Fleming, Baltimore, was exonerated by the coroner from all blame in the death of James B. Loane, who was struck by an automobile driven by Dr. Fleming and so severely injured that he died before reaching the Franklin Square Hospital.

MICHIGAN

New Society Officers.—At the annual meeting of the Wayne County Medical Society, held in Detroit, Dr. John L. Bell was elected president; Dr. Walter J. Wilson, Jr., vice president, and Dr. Raymond C. Andries, secretary.

Damages for Typhoid.—Damages amounting to $50,462 were granted to members of the Detroit Commandery, No. 1, K. T., and members of their families, on account of sickness caused by drinking polluted water from the Sault Ste. Marie River during a cruise on the steamship South American, in June, 1915.

Tuberculosis Farm for Detroit.—Dr. James W. Inches, health officer of Detroit, proposes to purchase a large tract of land suitable for farming and the erection of a large infirmary and a number of cottages for the treatment of cases of incipient tuberculosis. The proposed institution will cost about $1,000,000.

Personal.—Dr. Vinton J. Rickerd, Charlotte, is reported to be seriously ill with septicemia due to an infected wound of the finger.——Dr. Wayne J. Atwell, instructor in anatomy in the University of Michigan, Ann Arbor, has been appointed professor of anatomy in the University of Buffalo.——Dr. M. N. Nielson, Calumet, has been appointed oculist for the Middle Range Railroad.

To Study Sanatoriums.—Drs. Francis Duffield, Detroit; James W. Inches, St. Clair, and Albert M. Wehenkel of the Detroit Board of Health, and William B. Stratton have gone to Boston to attend the meeting of the National Tuberculosis Association and also to study sanatorium plans and investigate methods of handling the tuberculosis problem. For this work the Detroit City Council has made an appropriation of $2,000.

College Half a Century Old.—The Detroit College of Medicine and Surgery has completed fifty years of work and in celebration thereof, clinics were held, June 5 and 6, at the various hospitals in Detroit. Dr. John B. Deaver, Philadelphia, gave a surgical clinic at Harper Hospital, and Dr. Bertram W. Sippy, Chicago, a clinic on "Peptic Ulcer." On the evening of June 6, the annual smoker and vaudeville entertainment of the college was held.

MINNESOTA

War Chest for Hennepin County.—At a meeting of the Hennepin County Medical Society, May 27, seventy-five members of the society voted to contribute to a fund of at least $35,000 a year, to be devoted to the uses of dependents of members of the society who have entered military service. Sixty members are at present in war service.

Personal.—Dr. Benjamin F. Simon has been appointed health commissioner of St. Paul, succeeding Dr. Justus O'Hage.——Dr. G. M. Palmer, Bemidji, left for France, June 13, where he will do field work for the national Y. M. C. A.——Dr. Andrew W. Hilger, St. Paul, was operated on, June 3, in St. Joseph's Hospital and is reported to be doing well.——Dr. Charles H. Hunter, Minneapolis, is ill with nephritis at the Eitel Hospital, Minneapolis.——Dr. Pearl M. Hall, Minneapolis, has succeeded Dr. George W. Beach as superintendent of the Walker State Tuberculosis Sanatorium.——Dr. Albert J. Chesley, Minneapolis, has gone to France to assist in epidemiological work under the auspices of the American Red Cross.——Mr. Wallace G. Nye has been appointed permanent manager of the Minneapolis City Hospital.

MISSOURI

Personal.—Dr. Buford M. Colby, assistant physician at State Hospital No. 2, St. Joseph, has accepted the position of superintendent of the General Hospital at Kansas City.——Dr. Paul E. Coil of Mexico has purchased a residence in that city, which will be remodeled and adapted to hospital uses. The plans call for accommodations for fourteen patients with modern equipment throughout. The hospital will be opened about July 15.

NEW YORK

State Health Officers Meet.—The annual conference of state health officers met in Saratoga, June 25, 26 and 27. Among the speakers were Surg.-Gen. William C. Gorgas, Miss Julia Lathrop, chief of the federal Children's Bureau; Col. Simon Flexner, Dr. Rufus I. Cole, Major Alexander Lambert, Dr. John A. Fordyce, Dr. Livingston Ferrand and Dr. S. Josephine Baker.

Personal.—Dr. Stephen A. Brown, Westfield, who was shot in the jaw by Joseph J. Johnson, was discharged recovered from the Brooks Memorial Hospital, June 12.——Dr. Ledra Heazlit, Auburn, was caught between his automobile and a doorway of his garage, June 9, fracturing his right hip.——Dr. Roy H. Wixson has been appointed president; Dr. Harry C. Dumville, vice president, and Dr. George D. Stilson, secretary, of the Niagara Falls Academy of Medicine.

New York City

Conditions of Doctorate Degree.—Columbia University announces that after September of this year the degree of doctor of medicine will be conferred by the Columbia University College of Physicians and Surgeons only on men who have had one full year of service in a hospital under faculty supervision, in addition to four years in a medical school.

Personal.—Dr. Walter B. James, president of the New York Academy of Medicine, has been elected a trustee of Columbia University for a term of six years.——Dr. William H. Pierson, Brooklyn, has been elected president of the medical board of the Cumberland State Hospital.——Dr. Benjamin T. Terry, Brooklyn, has been appointed professor of pathology in Vanderbilt University, Nashville, Tenn., succeeding Dr. James W. Joblin, who has accepted an appointment at Columbia University.

Red Cross Money for Medical Research.—The war council of the American Red Cross announces that it has received a request from Cleveland H. Dodge, who subscribed $1,000,000 and various smaller amounts during the second Red Cross drive, that $250,000 of this sum be set aside for medical research work. In his letter to the American Red Cross, Mr. Dodge expresses himself as much impressed by the work done in ascertaining the methods of transmission of trench fever, and he directs that the foregoing sum be applied to a "thorough-going conduct of medical research designed to ascertain methods for the prevention and cure of diseases to which our soldiers and sailors may be exposed."

President Wilson Petitioned to Aid Hospitals.—A special meeting of the hospital conference of the city of New York met at the New York Hospital, June 17, to discuss ways and means of meeting the shortage of help of all kinds in the hospitals of this city and of the nation as a whole. Dr. Sigismund S. Goldwater brought out the fact that if the suggestion of a one-year intern course were adopted, on a basis of one intern to every twenty-five patients, there would be immediate need for 10,000 interns. Resolutions were adopted asking President Wilson to halt the further disruption of hospital organizations. A set of resolutions embodying a scheme to protect the hospitals and their personnel was drafted for presentation to Congress.

OHIO

New Venereal Disease Regulations.—New regulations regarding the control of venereal diseases in the state have been filed with the state department of health and will become effective, July 1. They require every case to be reported to the state board within twenty-four hours of diagnosis by physicians and dentists, with the name of the patient and various details, including the source of the infection, if possible. The patient is to be quarantined whenever the state commissioner of health considers quarantine necessary. Medical examination may be required of all persons "reasonably suspected of having venereal disease." This includes all prostitutes and persons associating with them. Cooperation of local health officials in the repression of prostitution is to be secured to the greatest possible extent.

PENNSYLVANIA

Personal.—While driving an automobile ambulance containing two convalescent soldiers into Philadelphia, Dr. Clifford B. Lull, West Scranton, attached to the Jefferson Ambulance Unit, rescued two women from an overturned and burning automobile.

Philadelphia

Class Banquet.—The fortieth anniversary banquet of the class of 1878, Medical Department of the University of Pennsylvania, was recently held at the University Club. Out of a graduating class of 128, there are 61 living.

Visit of British Medical Men.—The British medical deputation, touring this country to assist in the development of the Medical Reserve Corps, and consisting of Sir James Mackenzie, Sir William Arbuthnot Lane and Col. Herbert Bruce, were the guests of honor of the local medical societies at a reception in the ballroom of the Bellevue-Stratford Hotel, June 24.

Personal.—Dr. Elmer H. Funk has been appointed medical director of Jefferson Hospital Unit No. 28, which will soon leave for France.——Dr. Joseph Leidy has offered to be one of the 100 citizens to give $1,000 each to establish an endowment for the maintenance of military training in the high schools of the city.——Dr. Joseph S. Neff, Narberth, formerly director of health and charities, has been named by Governor Brumbaugh a member of the advisory board of the state department of health to succeed the late Senator Daniel Gerberich of Lebanon.

RHODE ISLAND

Personal.—Dr. A. J. Giggers, Providence, bacteriologist of the Rhode Island State Department of Health, has been appointed city bacteriologist of Rochester, N. Y.

State Society Meeting.—At the annual meeting of the Rhode Island Medical Society held in Providence, June 4 to 6, under the presidency of Dr. John Champlin, Westerly, the following officers were elected: president, Dr. Gardner T. Swarts, Providence; vice presidents, Drs. John M. Peters and Jesse E. Mowry; secretary, Dr. James W. Leech, Providence (reelected), and treasurer, Dr. Winthrop A. Risk.

UTAH

Appropriation for Social Disease Dispensary.—The city commission of Salt Lake City has voted an appropriation of $5,400 to defray the cost of the municipal dispensary to be established by the health department for the treatment of venereal diseases.

Personal.—Dr. Frank M. McHugh, Salt Lake City, suffered a severe scalp wound, and Dr. W. P. Skindale suffered contusions in a collision between a street car and an automobile in which they were riding, May 10.——Dr. Ephraim G. Hughes, Provo, has been appointed surgeon and consultant to the State Mental Hospital.

WASHINGTON

New County Officers.—At the annual meeting of the Lincoln County Medical Association, held in Harrington, June 2, Dr. Lee Ganson, Odessa, was elected president; Dr. Rufus

P. Moore, Davenport, vice president, and Dr. Joseph E. Bittner, Sprague, secretary-treasurer.

Medical Women Elect Officers.—At the annual meeting of the Medical Women's Club of Seattle, June 3, the following officers were elected: president, Dr. Sarah A. Kendall; vice president, Dr. Ada Collison; secretary, Dr. Mary D. Skinner, and treasurer, Dr. Mariette M. Armstrong.

Personal.—Dr. John R. Neely, Spokane, has been elected first assistant health officer, and Dr. David H. Ransom, Clarkston, second assistant city health officer of Spokane.——Dr. John W. Mowell, Olympia, chief medical adviser for the state of Washington, is ill with pneumonia at the base hospital at Camp Lewis.

WISCONSIN

Sanatorium Notes.—A fresh air camp for children suffering from tuberculosis has been opened near Neenah, with fifteen children in attendance.——The Jefferson County Board of Supervisors has appropriated $50,000 for a county tuberculosis sanatorium.

Personal.—Dr. William P. Barrett, Milwaukee, who was seriously injured in an automobile accident on the Cedarburg Road, June 9, is improving under treatment at the Emergency Hospital.——Dr. Gustave Windesheim has been reelected president, and Dr. George H. Ripley, vice chairman of the Kenosha Board of Health.

CANADA

Entire Class Volunteers.—At the convocation of the Western University, London, Ont., the entire graduating class in medicine appeared in uniform, as every member had volunteered to enter the Canadian Army Medical Corps for service at the front.

Medical Council Election.—At the concluding session of the medical council of Canada, held in Ottawa, June 12, it was decided that the next annual meeting should be held in Ottawa, on the third Tuesday in June, 1919. The following officers were elected: honorary president, Sir Thomas J. Roddick, Montreal (reelected); president, Dr. R. Eden Walker, New Westminster, B. C.; vice president, Dr. James C. Connell, Kingston, Ont.; registrar, Dr. Robert H. W. Powell, Ottawa, Ont. (reelected); general council, T. H. Chrysler, K. C., Ottawa, Ont.; auditor, G. L. Blatch, T. C. A., Ottawa, Ont.; executive committee, the honorary president, president and vice president, and Drs. Emmanuel P. Lachapelle, Montreal; Hon. Robert S. Thornton, Winnepeg, Manit.; Walter W. White, St. John's, N. B.; Hon. Reginald H. Brett, Edmonton, Alta., and Alexander MacNeill, Summerside, P. E. I.

Personal.—Dr. Charles J. C. O. Hastings, medical health officer of Toronto, delivered an address before the Alumni Association of the University of Buffalo, June 8, on "Influence of the War on Public Health Problems."——Lieut.-Col. William G. Anglin, Kingston, has been appointed registrar of man power in Kingston.——Dr. James D. Curtis, for two years medical officer for the workman's compensation board, Toronto, has returned to St. Catherine and has resumed practice.——Dr. Thomas E. Case, Dungannon, Ont., has been elected a member of the Ontario legislature by acclamation. ——Lieut.-Col. Thomas M. Leask, C. A. M. C., Moose Jaw, Sask., has received the D. S. O.——Col. Herbert A. Bruce and Sir Arbuthnot Lane were given a dinner at the York Club, Toronto, the evening of Monday, June 17. Afterward, they addressed the members of the Toronto Academy of Medicine on war problems, especially on their mission to the United States. Sir James Mackenzie was unable to be present.——Lieut.-Col. Henry R. Casgrain, Windsor, Ont., is still in command of No. 8 Canadian Hospital at St. Cloud, France.——Dr. Helen MacMurchy, Toronto, has been elected president of the Women's Canadian Club, Toronto.——Col. Alexander Primrose, Toronto, is mentioned as professor of surgery in the University of Toronto, in case there should be a reorganization of the medical staff.——Lieut.-Col. George G. Nasmith, C. M. G., of the department of health, Toronto, has been presented with a diploma in public health by the University of Toronto.——Surg.-Gen. George A. Sterling Ryerson, Toronto, on his western trip to the Pacific Coast, was detained several weeks in Seattle by the serious illness of his wife. ——Sir James A. Grant, Ottawa, is the only living member of the medical council of Ontario of 1866. He has been present at almost every meeting of the council in the last fifty-one years. He is also the only living member of the first Canadian Parliament at Confederation in 1867.——Dr. Alvin M. Warner, Vancouver, B. C., has been mentioned in dispatches from East Africa. Captain Warner gave up his practice early in 1916 to join the R. A. M. C. He was given command of the Blue Carrier Hospital and has built it up to an institution of 1,200 beds.

GENERAL

Surgeon-General Receives Degree.—Surg.-Gen. William C. Braisted, U. S. Navy, while in Chicago attending the meeting of the American Medical Association, had conferred on him the degree of Doctor of Science, by the Northwestern University, Evanston, Ill.

New Medico-Psychologic Officers.—At the annual meeting of the American Medico-Psychological Association in Chicago, June 5 to 7, under the presidency of James V. Anglin, St. Johns, N. B., the following officers were elected: president, Dr. Elmer E. Southard, Boston; vice president, Dr. Henry C. Eyman, Massillon, Ohio; secretary-treasurer, Dr. Arthur P. Herring, Baltimore, and auditor, Dr. Joseph C. Clark, Sykesville, Md.

Bequests and Donations.—The following bequests and donations have recently been announced:

Michael Reese Hospital, Chicago, $20,000, by the will of Joseph Schaffner.

Methodist Hospital and Deaconess Home, Indianapolis, $50,000, by the will of Charles W. Fairbanks, Indianapolis.

Medical Department, University of Pennsylvania, $50,000 for the founding of a chair of gynecology, by the will of Dr. William C. Goodell.

Middlebury (Conn.) College, $50,000 for the building of a hospital, a donation by Mr. William H. Porter, New York City.

Climatologists Elect Officers.—The American Climatological and Clinical Association, at its thirty-fifth annual convention held in Boston, June 5 to 6, elected the following officers: Dr. Guy Hinsdale, Hot Springs, Va., president; Drs. Joseph H. Pratt, Boston, and Hugh M. Kinghorn, Saranac Lake, N. Y., vice presidents; Dr. Arthur K. Stone, Boston, secretary-treasurer, and Dr. William D. Robinson, Philadelphia, recording secretary.

Surgeons Elect Officers.—At the annual meeting of the American Surgical Association, held in Cincinnati, June 6 to 8, under the presidency of Dr. Thomas W. Huntington, San Francisco, the following officers were elected: president, Dr. Lewis S. Pilcher, Brooklyn; vice presidents, Drs. George W. Crile and Edward Martin, Philadelphia; secretary, Dr. John H. Gibbon, Philadelphia; assistant secretary, Dr. Francis T. Stewart, Philadelphia; treasurer, Dr. Charles H. Peck, and assistant treasurer, Dr. Charles N. Dowd, New York City.

Federal Aid and Extension of Rural Sanitation.—At the sixteenth annual conference of state and territorial health authorities with the United States Public Health Service, Washington, D. C., June 3 and 4, resolutions were adopted reciting the need of rural sanitation and endorsing federal aid extension. The U. S. Public Health Service was urged to persist in securing legislation to this end, with the assistance of state health organizations. A federal system of supervision of the health of war industrial centers was advocated. Arkansas was commended for its compulsory vaccination law. The Chamberlain-Kahn bill for the suppression of venereal diseases among the civilian population, as well as in the military forces, was endorsed. A committee was recommended to study and report on sewage disposal in unsewered communities, and the authorities were called on to ascertain and make a statement of the number of members of the medical profession, sanitary engineers and graduate nurses taken from public health work by military needs, and the number that will probably be taken from such work. A committee of five was selected to confer with the committee on sanitary policy under war conditions.

FOREIGN

Prize for Research on Arsphenamin (Salvarsan).—The Academia de Ciencias Medicas of Bilbao, in northern Spain, offers two prizes of 250 pesetas each for the best work on arsphenamin and its derivatives, their production and chemical differentiation, and pharmacologic research on them and on methods of making them in Spain. Competition is open only to Spanish physicians, pharmacists, veterinarians and dentists, and the works must be in the hands of the secretary before Aug. 1, 1918. Address, Secretario general, C. Mendaza, Bilbao.

Netherlands Hospital Unit in France.—On the occasion of his leaving for return to the Netherlands, Dr. L. van den Steen, who has been at the head of the Netherlands ambulance at Pré Catalan, Paris, was presented with a bronze medal by the Netherlands colony in Paris, with much ceremony. The French government also presented him with the Cross of the Legion of Honor in recognition of his devoted services for such a long time. The *palmes académiques* were also conferred on his wife. His place as chief of the ambulance has been taken by Dr. A. E. Vermey, who has been at the hospital since the first of the year.

Honors Asked for Medical Men in Austria.—The *Nederlandsch Tijdschrift* relates that in the lower house of the Austrian parliament an appeal recently was made to the authorities to arrange for more appropriate recognition of the difficult and dangerous work accomplished by the members of the medical corps of the army. Some of the deputies emphasized that many hundreds have died or been weakened by infectious diseases or have been held war prisoners for years. No provisions, however, have been made for decorating them for conspicuous gallantry beyond the same distinctions granted to nurses, officers' wives and court lackeys. The deputies demanded that the medical officers should be placed on the same plane in this respect as other military officers.

Medical Care for Refugees in France.—The *Progrès Médical* gives the text of a recent official notice which provides that army physicians and surgeons and the mobilized civilian medical men are to care for refugees in their respective districts when called on to do so by the prefect of the place when the local civilian force of physicians is inadequate to attend them. No fees are to be asked or accepted. Parties of refugees in barracks, improvised hospitals, etc., come under the provisions of this notice. The chief of the regional army medical department is to furnish the medical personnel at the request of the prefect. The medicines and dressings used are to be supplied by the usual provisions for care of the indigent. If they are provided by the army medical department, the latter will be reimbursed by the state department of the interior.

Death of Pozzi.—The cable brings the tragic news that Professor Pozzi of Paris, aged 72, was recently shot by a man—probably demented. Prof. Jean Samuel Pozzi was well known in this country, as he was a prominent figure at international medical gatherings, and what he had to say on gynecology and abdominal surgery was authoritative. He had been president of the Société de Chirurgie, d'Anthropologie and de Gynécologie, and presided at many medical congresses besides taking a prominent part in national legislation as senator, as member of the conseil de surveillance of the Assistance publique. He founded the *Revue de Gynécologie et de Chirurgie abdominale* in 1897, and his Traité de Gynécologie has been translated into five languages at least. Besides a love of travel, he was interested in archeology, and was vice president of the French society for archeologic research.

Deaths in the Profession Abroad.—**G. J. G. Minderop**, a prominent physician of Rotterdam, aged 84.—**B. Sommer**, professor of dermatology at the University of Buenos Aires; delegate from Argentina in various international medical and specialist gatherings; secretary of the international conference on leprosy at Berlin in 1897, and for a time chief of the Asistencia Publica of Buenos Aires and member of the city council.——**P. Gomez** of Bogota, Colombia, who helped to lay the foundation for the prophylaxis and treatment of epidemic diseases in Colombia, aged 74.——**J. G. del Castillo**, medical inspector of the Argentine navy into which he introduced vaccination against typhoid and obligatory prophylaxis against venereal disease.——**R. Frias**, professor of surgery at the University of Lisbon, aged 65.——**Perrin de la Touche**, professor of physiology at the medical school at Rennes and lately director of the school, also a son, grandson and great grandson of physicians.——The *Nederlandsch Tijdschrift* mentions the death of the surgeon, **F. Riedinger**, at Würzburg, aged 73; of the pediatrist **Ganghofner** of Prague, aged 75; of the neurologist **Lewandowsky** of Berlin, who succumbed to typhus, and of the ophthalmologist, **S. Bernheimer** of Innsbruck.

CORRECTION

Body of Colonel Reno Not Recovered.—Some time ago The Journal printed a statement to the effect that the body of Col. W. W. Reno, reported lost at sea, had been recovered. The statement was taken from a newspaper item. We find on investigation that the newspaper item was in error, and that, although thorough search has been made, the body of Colonel Reno has not been found.

LONDON LETTER

London, May 28, 1918.

The Bombing of British Hospitals

German "thoroughness" has left no possible atrocity undone in this war, and attacks on the Red Cross by sea and land have become a commonplace. But for sheer fiendishness the recent bombing of a large group of hospitals in France may be regarded as the climax. The hospital tents cover a great area of ground, and the Germans are perfectly well aware of the character of the place; the entire absence of concealment makes it a mark which no airman could possibly miss. Bombs dropped from any height in any wind must land somewhere among the attendants' quarters or the tents occupied by the wounded. On a Sunday night two separate squadrons, numbering together more than a score of machines, dropped bombs which caused many casualties to patients, sisters and medical officers far exceeding those of a London raid. Taught by experience that the Red Cross is no protection against German barbarity, the authorities had provided shelters to which the sisters could have gone for refuge; but as the cots were filled with helpless wounded, many hundreds of whom could not be moved, they refused to leave their patients and did their best to keep up their courage. Many paid for their devotion with their lives. Some of the German machines came down low, and the raiders raked the hospital tents and attendants' quarters with their machine guns. The captain of one machine, formerly employed in the German diplomatic service, was brought down wounded. He tried at first to excuse himself by saying he saw no Red Cross. Challenged with the fact that he knew he was attacking hospitals he endeavored to plead that they should not be placed near railways and if they were they must take the consequences. But apart from the fact that hospitals must be near railways for the transport of patients, the raiders in this case did not attack the railway but deliberately bombed the hospital.

Physicians for the Army

New regulations have been made relating to applications for the exemption of physicians from army service. A special medical tribunal is to be appointed which can refer applications to local professional committees to report on them. As in the past, applications concerning members of the staffs of London hospitals will be referred to a special committee of reference. When the circumstances of each locality are under review, notification will be sent by the Minister of National Service to each physician affected, informing him of the time in which he may apply for exemption from military service. There is a special provision under which an exemption shall be subject to the condition that the physician shall undertake such professional service as the government may deem best in the national interests. This provision has been made because the demand for physicians for military and civil service is so great that only by a careful distribution of the available physicians can the requirements of the country be met.

An Index of Military Medical Officers

A card index of all medical officers whether regular, retired, special reserve, territorial, or holding temporary commissions, has been in existence for some time and is now being extended and completed. It has been found of great utility. Medical officers are asked to furnish particulars as to age, medical school, qualifications, hospital and other appointments, such as that of health officers, and to give information as to any special training, research work or publications. They also have to furnish information as to how they have been employed during the war. These particulars are transferred to index cards which are kept at the director general's office. When an officer is posted to an expeditionary force or command a duplicate is forwarded to the headquarters of the force where it may be added to, or form the basis of, what may be called a local card index. The blanks filled in by the medical officers after being used for the purpose of the card index will be passed on after classification to a series of specialist committees, who will grade the officers according to the extent and nature of their experience. Thus, for example, an officer who has undertaken or directed independent researches will be put in Grade 1, from which selection will be made for higher appointments, such as director of the military laboratory. An officer with less experience, who has shown himself capable of research under supervision, will be placed in Grade 2 and eligible for similar employment in military laboratories. Officers trained in bacteriology, but who have not yet done research work, will be placed in Grade 3 and employed as assistants in military laboratories. The same principle will apply to other specialties.

A Hospital Alleged to Be a "Nuisance"

An unusual case has been heard in the High Court of Justice in which the proprietors of a house in Newport brought an action to restrain the defendants from using it as a hospital for surgical tuberculosis, on the grounds that this would be a "nuisance." One of the covenants in the lease was that no noisy, noisome or offensive trade or business was to be carried on. The plaintiffs alleged that tuberculosis is an infectious disease and the hospital a source of danger to the neighborhood. For the defendants a large mass of expert evidence was given that the hospital would not be a source of danger to the neighborhood and that there was no risk of infection to those in its immediate vicinity. The judge, Mr. Justice Eve, therefore decided that the hospital was not a nuisance. He found as to the sights that it was not proved that "every detail of the dressing of the patients was visible to inhabitants of neighboring houses." As to noise, it had been exaggerated, and, like the sights, could not reasonably be said to amount to anything that was noisome or offensive, though he could well understand that it might now and again be distressing and even annoying. As to smells, the case on the disinfectants, in his opinion, came to nothing, and as the alleged smell from the burning of dressings and bandages was not mentioned until the trial, when the defendants had no opportunity of investigating the matter, he should not allow that to be substituted for the complaint in the pleading. The hospital was in no sense a danger to the neighborhood and there was nothing in the way in which it was conducted that could properly be said to be noisome or offensive.

Precautions Against the Spread of Malaria in England

In a previous letter to The Journal some cases were related in which soldiers suffering from malaria had, through the medium of mosquitoes, been a source of infection. This danger from the return of infected soldiers from abroad has been apprehended by the War Office for some time. Early in 1917 it was decided to concentrate infected soldiers in eight special malaria hospitals under the control of medical officers experienced in the disease. Col. Sir Ronald Ross has now issued a memorandum on the subject. Indigenous cases of malaria began to appear in England last summer. The first series consisted of five or six cases of benign tertian in the Aldershot district among the troops. Then some civil and military cases were reported in other districts. Civilian health officers were communicated with and worked in conjunction with the military authorities. General instructions for the treatment of malaria patients, both in hospital and outside, were issued broadcast by the War Office. According to these, all malaria patients were given 60 grains of quinin weekly, and were provided with additional bottles of quinin tablets in order to prevent relapses of fever and the spread of the disease from malaria carriers to healthy persons. Simultaneously, all malaria patients in places where mosquitoes abounded were collected in sheds protected against the entry of the insects, when they were not sent to special malaria hospitals. The patients in the malaria hospitals were similarly protected when necessary. Much work was done in the way of clearing and oiling pools and watercourses. For military reasons it was not found possible altogether to keep old cases of malaria out of all districts where anophelines abound, but it is thought that protection from mosquitoe bites with persistent dosing with quinin will suffice to check the spread of malaria from the military cases in such localities. In Sir Ronald Ross' opinion the anophelines are comparatively so scarce in most parts of Britain as to render the danger of spread of malaria a negligible quantity, except only at a few spots where the insects are more numerous. Nevertheless special precautions are being taken even in places where no indigenous cases are known to have occurred. Several medical officers have been engaged in moving about among the most dangerous areas in order to supervise the measures that are being taken to inspect local conditions and to instruct local authorities, both civil and military. Sir Ronald Ross himself inspected most of the dangerous localities, and experienced entomologists have made surveys in them. A general system has been adopted for the immediate notification of all cases of malaria entering the United Kingdom from abroad, for the purpose of recording where such patients disembark and where they go when on leave or are stationed when on duty or in hospital. Health officers are informed when all such patients enter their districts, and the subsequent career of these persons is watched and a regular monthly report sent in by medical officers of all units and hospitals in the United Kingdom. These reports are collected and tabulated and studied. Up to the present no cases of indigenous malaria have been reported during the present year. Former foci of malaria in England are under minute supervision, and if new foci develop, experts will be sent to deal with the matter forthwith.

American Hospital in Ireland

A spacious dwelling house, with a large area of land attached, not far from Queenstown, has been acquired by the American naval authorities as a hospital for men in American naval vessels employed on this side of the Atlantic. Wooden dormitories to accommodate 250 sick men will be added to the present building. These dormitories will be built in America in sections and brought over to the hospital, which will be staffed by the American Red Cross.

PARIS LETTER

Paris, May 23, 1918.

Tumors of Traumatic Origin

Prof. J. L. Faure recently directed attention to tumors of traumatic origin of which Dr. Vitrac of Libourne had reported two interesting cases. One of the patients was a soldier who had been wounded, April 3, 1917, by a large shell fragment which entered the external aspect of the thigh, below the great trochanter. The fragment was arrested in the popliteal region without having wounded any of the vessels or nerves. The projectile was extracted after a very free dissection, and the patient was later evacuated. April 29, much suppuration was present; but by the middle of June, cicatrization was complete. Toward the end of the month there was noted a swelling, about the size of a nut, very hard, but not painful or tender. Naturally, it was regarded as an inflammatory mass, but little by little it took on all the characteristics of a malignant tumor. Various treatments, including specific, were resorted to, but all met with failure. The tumor continued to increase in size until it measured 18 cm. in length and from 6 to 8 centimeters in width. It was extirpated, Sept. 21, 1917. The lower pole of the tumor was encapsulated, but the upper pole was separated with difficulty from the muscles, which were more or less degenerated and lardaceous. Recovery was uneventful. The enlarged glands in Scarpa's triangle reacted favorably to radiotherapy. Histologic examination of the tumor showed it to be an angiosarcoma.

The second case was that of a mounted artilleryman who, March 10, 1916, had his left thigh pressed severely against the trunk of a tree. He was in the hospital for a month, nothing more than the ordinary signs of a contusion being found as the result of his accident. He returned to duty and had no further inconvenience until September, 1917, when he noticed a mass on the antero-external surface of his thigh. This mass slowly increased in size and also became painful. The man was operated on, March 1, 1918. The tumor was firmly adherent to the surrounding tissues and extended down to the periosteum of the femur. It was removed with great difficulty, and much bleeding was present. The tumor was of about the size of an orange. Histologic examination showed that it was an encapsulated sarcoma with much telangiectasis.

These two observations seem to prove that a sarcomatous tumor, if the diagnosis was correct, may be caused by trauma. These cases occur too often for the fact to be doubted. Faure saw a woman recently who had received a severe blow on the breast in an automobile accident. The skin was severely contused and sloughed; a scar several centimeters square formed. Several months afterward an elongated movable mass was noted under the cicatrix with all the characteristics of a benign tumor. It has not been possible to determine its exact nature because the patient has refused operation; but today, three and a half years later, the tumor is still there and growing larger.

In the discussion that followed, Broca stated that there is no scientific proof of the traumatic origin of tumors, and that in all these cases the germ of the tumor had probably been present but dormant. Mauclaire said that a distinction must be made between malignant and benign tumors. A trauma is often the evident cause of an osteoma, but he did not believe that that was the case in the production of a sarcoma. Kirmisson admitted that a trauma can, in some cases, act as a sort of stimulant or impulse to a latent neoplasm, which would not have taken on active growth except as the result of the accident. Thiéry said that in spite of the real importance of this subject, one can accept more easily the relationship of trauma with a number of other affections of unknown etiology (appendicitis, so-called local tuberculosis, tumor). Too little attention is paid, to begin with, to establishing the actual, distinct, important or probable occurrence of the trauma at the exact point where the neoplasm develops. More rigorous investigation would often show the unfoundedness of the patient's statements, even when there is no question of his sincerity. The tumor may not have developed on the precise spot that was traumatized. Thiéry does not know of a single case in which he has been able to establish even a probable relationship between the trauma and the appearance of the tumor (not including epithelial degenerations of cicatrices, of burns, etc). Chaput cited a case of trauma of the right iliac fossa by a wagon pole, which, in the course of a few weeks, was followed by the appearance of a sarcoma to which the patient, a young man, succumbed quickly. From the point of view of industrial accidents, responsibility is admitted when the occurrence of a severe trauma is established. Arrou saw a young girl who had received a trauma of the thigh, and in a few weeks a tumor, having all the appearances of a sarcoma, appeared. When that tumor was examined in the laboratory it was found to be merely an inflammatory mass.

National Headquarters for Rehabilitation of Crippled and Disabled Soldiers

The institution of this service was mentioned in a previous letter (The Journal, June 1, 1918, p. 1784). The members of the committee in charge of this work have been appointed for a period of three years. They consist of representatives of the ministry of work, of commerce, agriculture, marine, finance, public instruction and of the colonies. One of the representatives of the ministry of war is Dr. Jeanbrau, surgeon-major, of Montpellier, chief of the section of the professional reeducation of the disabled. Drs. Rieffel and Camus of Paris and several directors of the schools of reeducation are also members of the committee.

War Archives and Museum at Val-de-Grâce

Two years ago the undersecretary of state for the Service de Santé militaire ordered that the medical and surgical archives of the war be deposited in the Ecole d'application de médecine et de pharmacie militaire du Val-de-Grâce. This is situated on the rue Saint Jacques, Paris. Previously made collections and the libraries of the Ecole du Val-de-Grâce and other establishments constitute a most important educational aid, the further extension of which must be foreseen. In order to facilitate the growth and development of this institution, it has been decided to unite, in the form of autonomous establishments, the various services heretofore under the jurisdiction of the undersecretary of state of the Service de Santé militaire. The new establishment will be known as the musée du Val-de-Grâce, comprising the collection of the archives and documents of war, the central library of the Service de Santé militaire, and the archives of military medicine and pharmacy, so that all the services will be placed under the jurisdiction of the musée directors by order of the minister of war. The director of the Ecole d'application de médecine et de pharmacie militaire du Val-de-Grâce, will be *ex officio* in charge of the whole as the representative of the state war department.

Decoration of the Legion of Honor Awarded to Civilian Physicians for Devoted Services in War Time

The cross of the Legion of Honor (grade of officer) has been awarded to Dr. Langlet, mayor of Reims. Dr. Samsoen, municipal councilor of Hazebrouck, department du Nord, and Dr. Hoel of Reims have been made chevaliers of the Legion for herioc services rendered to the civilian population during the bombardments of Reims.

Promotions in the Auxiliary Medical Service

The undersecretary of state for the Service de Santé militaire has decreed that all physicians connected with the service auxiliaire, whether of the grade of médecin auxiliaire or not, shall be recommended for the grade of médecin aide-major of the second class, temporarily, if they have not yet made the request. These promotions will become effective automatically, provided the applicants have shown professional aptitude (*certificat de visite et de contre-visite* testifying to physical fitness for light medical service, for instance, in the hospitals of the *zone des étapes*), and that they will give the guarantees demanded of all officers.

Refugee Trains

One of the three societies composing the French Red Cross, the Société de secours aux blessés militaires, which has been administering to the needs of the reconstructed villages, has come to the assistance of the population of these villages when, on invasion by the enemy, they had to abandon their homes again. A service was organized at once to accompany the refugees on the transport trains. These trains which sometimes are in transit for day and night, are supplied with food by the nurses at the railroad depots where food is prepared in advance. Two nurses accompany each train until it reaches its destination. During the transit they give the occupants all the care which they need; they distribute milk to the children, give the sick warm drinks, soups and warm clothing. Each train is provided with a first aid box and a small pharmacy. Up to the first of May, thirty trips had already been made by sixty nurses of the society.

Personal

In its session of May 14, the Académie de médecine elected Dr. Theodore Tuffier a member of the section on surgical pathology, and Dr. Patein a member of the section on pharmacy. Dr. Patein is chief pharmacist of the Lariboisière hospital, and was formerly president of the Société de pharmacie and of the Société de thérapeutique.

Marriages

Lieut. Harold Linhoff Brereton, M. R. C., U. S. Army, Emmettsburg Iowa, on duty at Camp Dix, N. J., to Miss Isabel Catherine Bayne of Fergus, Ont., formerly superintendent of nurses at the L. L. Culver, Union Hospital, Crawfordsville, Ind., at Brooklyn, N. Y., April 23.

Asst. Surg. Carl James Robertson, U. S. N. R. F., Litchfield, Minn., on duty at Great Lakes, Ill., to Miss Marjorie Kohl of Wayne, Nebraska, at Evanston, Ill., May 22.

Lieut. Lawrence David Enloe, M. R. C., U. S. Army, Jefferson City, Mo.; on duty at Camp Pike, Ark., to Miss Dorothy Agee of Jefferson City, at St. Louis, June 4.

Lieut. John Andrew Saari, M. R. C., U. S. Army, Eveleth, Minn., on duty at Fort Lee, Va., to Miss Allie Miettenen of Brookston, Minn., in Chicago, June 1.

Lieut. Walter Leland Richards, M. C., U. S. Army, Pocomoke City, Md., on duty at Camp Greenleaf, Ga., to Miss Edith Coleman of Baltimore, June 8.

Lieut. Wilbur Carter, M. R. C., U. S. Army, Sherman, Texas, on duty at Fort Riley, Kan., to Miss Gladys Wolfe of Sherman Texas, April 8.

Asst. Surg. Noel Carlysle Ice, U. S. P. H. S., of Cleveland, on duty at Nitro, W. Va., to Miss Zelma Jockisch of Beardstown, Ill., June 1.

Capt. Robert Anthony Kilduff, M. R. C., U. S. Army, Chester, Pa., on duty at Camp Meade, Md., to Miss Adelade Long, June 12.

Lieut. Charles Henry Reinhardt, M. R. C., U. S. Army, to Mrs. Mary Baker, both of Chicago, at Newport News, Va., April 13.

Asst. Surg. Harvey Ross McAllister, U. S. Navy, Washington, D. C., to Miss Edith Lulu Sooy of Alameda, Calif., May 23.

P. A. Surg. Frank Haldane Haigler, U. S. Navy, Washington, D. C., to Miss Maybelle Hefferlin of Portland, Ore, June 11.

Capt. Henry Edward Meleney, M. R. C., U. S. Army, Brooklyn, to Miss Elsie Genevra Todd of Springfield, Mass., June 12.

Lieut. Walter Darrow Bayard, M. R. C., U. S. Army, Fargo, N. D., to Miss Myrtle Baker of Chicago, recently.

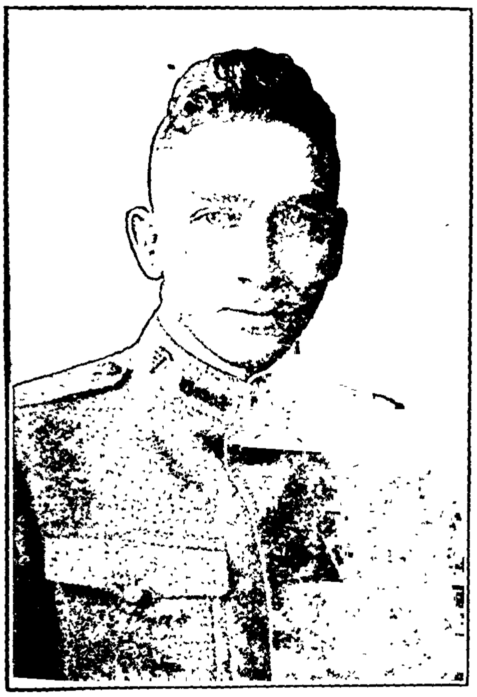
Charles Carter Cranmer, New York City, to Miss Ada Hortense Van Giesen of Hackensack, N. J., June 27.

Lieut. Frank Nevin Ogden, M. R. C., U. S. Army, to Miss Ellen Price McCarty, both of Baltimore, June 13.

William Warren Stevenson, Chicago, to Miss Caroline E. Pretzlaff, at Sibley, Ill., June 10.

Deaths

Major Eugene Wilson Caldwell, M. R. C., U. S. Army, New York City; University and Bellevue Hospital, Medical College, 1905; aged 44; a Fellow of the American Medical Association; a member of the American Roentgen Ray Association, and its president in 1907 to 1909; a member of the New York Academy of Medicine; who for more than twenty years had devoted his time almost exclusively to experimental work with the roentgen rays and their practical application in diagnosis; the inventor of the Caldwell liquid interrupter, and many other appliances used with the roentgen ray; visiting physician to the roentgen department of the Presbyterian Hospital, New York City; director of the Edward N. Gibbs Memorial X-Ray Laboratory, Bellevue Medical College; author of a standard textbook and of many monographs on the roentgen rays and telephony; died in Roosevelt Hospital, New York City, June 20, from burns sustained the day before while making roentgen-ray experiments.



Died in the Service
IN FRANCE
Lieut. Abner P. H. Sage, M. R. C., U. S. Army, 1889-1918

Thomas Cook Stellwagon, Media, Pa.; University of Pennsylvania, Philadelphia, 1868; aged 76; a Fellow of the American Medical Association; a graduate of the Pennsylvania Dental College in 1861; and for nearly half a century a dentist of Philadelphia; for many years professor of physiology in the Philadelphia Dental College, and in the Medico-Chirurgical College of Philadelphia, and one of the founders of the latter institution; a veteran of the Civil War, in which he served in the Navy; died at his home, June 7.

Ernest Varian Scribner, Worcester, Mass.; Bowdoin Medical School, Brunswick and Portland, Me.; aged 62; a Fellow of the American Medical Association; a member of the American Medico-Psychological Association; for thirty-seven years a member of the staff of the Grafton and Worcester State hospitals, and assistant superintendent and superintendent of both institutions; an alienist of high rank; for six years superintendent of the Worcester State Hospital; died at his home, June 14.

George Edward Swift, Hudson, N. Y.; Albany (N. Y.) Medical College, 1884; aged 58; a member of the Medical Society of the State of New York; health officer of Hudson and Columbia County for several terms, and visiting physician to the Hudson Hospital; second lieutenant in the National Guard of the State of New York for five years; died in the Hudson Hospital, May 31, eleven days after an operation for appendicitis.

William Summer Clark, Los Angeles; Central College of Physicians and Surgeons, Indianapolis, 1881; aged 62; a Fellow of the American Medical Association; chairman of the tree-planting committee of the Los Angeles City Club, and prominent as a civic worker; was killed in an automobile accident near Compton, Calif., June 4.

Lieut. William Louis Miller, M. R. C., U. S. Army, Saginaw, Mich.; University of Oregon, Portland, 1915; aged 28; a Fellow of the American Medical Association; a registered pharmacist; on duty with Ambulance Company No. 128, Sanitary Train No. 107, Thirty-Second Division, American E. F. in France; was killed, May 28.

Valentine Mott, New York City; Bellevue Hospital Medical College, 1878; aged 65; a Fellow of the American Medical Association; attending surgeon, outdoor department, Bellev Hospital; one of the earliest exponents of the Pasteur pr phylactic treatment for hydrophobia; died in New York Cit June 20, from angina pectoris.

James Livingston Wilgus, Chicago; Medical College Indiana, Indianapolis, 1896; a Fellow of the American Med cal Association; while driving in his automobile, over a lev crossing near Grand Beach, Mich., was struck by a Michiga Central train, June 7, and died from his injuries a few hou later in a hospital at South Bend.

Charles Perkins Cook, Churchtown, N. Y.; New Yo Homeopathic Medical College, New York City, 1868; aged 7 for thirty years physician to the Hudson Orphan Asylun for several years health officer of the city and once assista surgeon-general of the state; died at the home of his son Brookline, Mass., May 28.

Lieut. David Mays Vogt, M. R. C., U. S. Army, Newman town, Pa.; University of Pennsylvania, Philadelphia; aged 3 on duty at Picatinny Arsenal, Dover; was injured by t overturning of his automobile near Millburn, N. J., and di in the Overbrook Hospital, Summit, N. J., May 30, from h injuries.

Major Woods Walker Lynch, M. R. C., U. S. Army, Mi land, Texas; University of Texas, Galveston, 1899; aged 4 on duty at Base Hospital, Camp Sheridan, Montgomery, Ala formerly a Fellow of the American Medical Association; member of the State Medical Association of Texas; die June 9.

William Vestus Balch, Galway, N. Y.; College of Phy cians and Surgeons in the City of New York, 1871; aged 6 health officer of Saratoga County; vice president of t board of managers of the Homestead Sanatorium and t Saratoga County Tuberculosis Hospital; died at his hon June 5.

Michael Gramling Salley, Orangeburg, S. C.; University Maryland, Baltimore, 1872; aged 68; formerly a Fellow the American Medical Association; a member of the Sou Carolina Medical Association; died at the home of daughter in Colu bia, S. C., June from angina pector

Died in the Service
IN FRANCE
Lieut. William L. Miller, M. R. C., U. S. Army, 1890-1918

Charles Herbe Williams, Bosto Harvard Medic School, 1874; ag 67; a Fellow of t American Medical A sociation, and a me ber of the Americ Ophthalmological S ciety; a well kno specialist on disea of the eye; died at home in Cambrid June 9, from he disease.

Lieut. Abner Po Hubert Sage, M. R. U. S. Army, Memph Tenn.; Jefferson Me ical College, 191 aged 29; a memb of the Tennessee Sta Medical Associatio on duty with a Briti field ambulance France; died, May 3 from wounds receive in action.

John William Har ris, Eugene, Ore. Willamette Universi ty, Salem, Ore., 1884 aged 64; formerly a member of the Oregon State Medica Association; was found dead, June 7, in Hendricks Par near Eugene. His death is believed to have been due t exhaustion.

John Merritt, Brooklyn; Long Island College Hospita Brooklyn, 1875; aged 72; for several years attending physicia at the Sheltering Arms Day Nursery, Brooklyn; died at h home, March 9, from senile debility.

Orlando Benedict Mayer, Newberry, S. C.; Medical Co lege of South Carolina, Charleston, 1874; aged 64; formerly Fellow of the American Medical Association; died recently.

Henry R. Watts, Baltimore; University of Maryland, Baltimore, 1864; aged 75; a veteran of the Civil War, in which he served in the Navy, afterward appraiser in the Baltimore Custom House; for twenty years a pharmacist; died at his home, May 24.

Leo Joseph Flanagan, South San Francisco, Calif.; Georgetown University, Washington, D. C., 1911; aged 32; formerly a member of the Medical Society of the State of California; died in St. Mary's Hospital, San Francisco, June 11, from pneumonia.

Gilbert Emanuel Anderson, North Bend, Ore.; Barnes Medical College, St. Louis, 1911; aged 36; a member of the Oregon State Medical Association; died at his home, June 10, from septicemia, following an infected wound of the thumb.

Robert Graham Ralston, Cowansville, Pa.; Jefferson Medical College, 1860; aged 88; a member of the Medical Society of the State of Pennsylvania; for fifty-seven years a practitioner of Cowansville; died at his home, May 23.

Edwin G. Cowperthwaite, Philadelphia; Hahnemann Medical College, Philadelphia, 1895; aged 44; for several years a member of the staff of the eye dispensary of the Hahnemann Hospital, Philadelphia; died at his home, June 11.

Cleveland James Shambaugh, Cherry Valley, Ill.; Bennett Medical College, Chicago, 1911; aged 32; who was overcome by heat, June 16, committed suicide by cutting his throat in a garage in Cherry Valley, June 17.

Lieut. Charles Francis Butler, M. R. C., U. S. Army, Pittsburgh; Medico-Chirurgical College of Philadelphia, 1915; aged 23; a member of the Medical Society of the State of Pennsylvania; died, June 4.

Frederick Weygandt, Brooklyn; College of Physicians and Surgeons in the City of New York, 1875; aged 70; formerly a member of the Medical Society of the State of New York; died at his home, June 12.

Joseph J. Back, Newport, Ky.; Medical College of Ohio, Cincinnati, 1902; aged 39; formerly a member of the Kentucky State Medical Association; died at his home, June 9, from tuberculosis.

William S. Town, Rockford, N. Y.; University of Buffalo, N. Y., 1880; aged 64; health officer of Niagara County, and of the town of Cambria; died at the home of his brother in Newfane, June 8.

Adelaide Eliza Thomas, Florence, Mont.; State University of Iowa, College of Homeopathic Medicine, Iowa City, 1896; aged 77; died in Carleton, Mont.; June 10, from cerebral hemorrhage.

John Edwin Urqhart, Ashfield, Mass.; University of Maryland, Baltimore, 1883; aged 58; a Fellow of the American Medical Association; died at his home, June 14, from cerebral hemorrhage.

Lewis Edward Harvie, Danville, Va.; Medical College of Virginia, Richmond, 1867; aged 75; a member of the Medical Society of Virginia; a Confederate veteran; died at his home, recently.

Kenney N. Miller, Houston, Texas; University of Louisville, Ky., 1884; aged 58; a Fellow of the American Medical Association; died at his home, June 13, from heart disease.

Carl Louis Muller, Nevada City, Calif.; Jefferson Medical College, 1888; aged 56; a Fellow of the American Medical Association; died in a hospital in San Francisco, June 11.

William C. Kelly, Flint, Mich.; Milwaukee (Wis.) Medical College, 1897; aged 61; a member of the Michigan State Medical Society; died at his home, June 8.

Donat F. Racicot, Biddeford, Me. (license, Maine, Act of 1895); aged 59; a practitioner for more than twenty-five years; died at his home, June 13.

Thomas Banter Hopper, Jersey City, N. J.; Bellevue Hospital Medical College, 1891; aged 52; died at his home, April 8, from pneumonia.

Neal Baker Dean, Alexander City, Ala.; Tulane University, New Orleans, 1905; aged 34; died at his home, May 9, from bronchopneumonia.

Howell Cobb Davies, Youngstown, Ohio; University of Pittsburgh, 1897; aged 42; died at his home, June 9, from pernicious anemia.

Stephen W. Gerrow, New Paltz, N. Y.; Castleton (Vt.) Medical College, 1856; aged 83; died at his home, June 13.

James Roderich Berwick, Methuen, Mass.; Dartmouth Medical School, Hanover, N. H., 1899; died suddenly, June 1.

A. N. Snoddy, Dayton, Ind.; Medical College of Ohio, Cincinnati, 1859; aged 84; died at his home, June 12.

Correspondence

UNRIGHTEOUS PROFITS IN PATENTED PRODUCTS

To the Editor:—In line with Dr. Bevan's address in regard to leaving German scientists and preparations alone and using American, I will state that "Aspirin Bayer" decreased in price from $8.80 to $4.40 per thousand at the time their patent expired, about eighteen months ago. The foregoing were prices I paid at that time, being a retail druggist. Physicians, not druggists, paid more. They were charging $4.40 per thousand above legitimate profit or they would not have reduced the price that amount when their protection expired. I wonder how many millions of these $4.40 went to help the kaiser.

The government should protect a patentee (if not a Hun) but should not allow him to collect cost plus a legitimate profit and then double the charge.

C. H. Harris, M.D., New Paris, Ohio.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SERVICE FLAG—SALUTING THE COLORS

To the Editor:—1. Is the service flag intended for the Army and Navy service and their branches, the fighting men and the necessary men connected with each service aside from the fighting men, or does it also include Red Cross nurses? 2. Can you give me any information relative to the method of saluting the colors and of responding to the national air?

M. Bachman, M.D., Lake Park, Iowa.

Answer.—1. The service flag is displayed for those in the active service of the Army or the Navy of the country; Red Cross nurses on active duty with the fighting forces should be included.

2. Existing regulations governing the Army provide that when officers and enlisted men pass the national flag they will render homage as follows: If in civilian dress and covered, they will uncover, holding their head-dress opposite their left shoulder with their right hand; if uncovered, they will salute with the right-hand salute. Whenever the national air is played at any place where persons belonging to the military or naval service are present, all officers and enlisted men not in formation are required to stand at attention, facing toward the music, except when the flag is being lowered at sunset, on which occasion they are required to face toward the flag. If in civilian dress and uncovered, they should stand and salute at the first note of the air, retaining the position of salute until the last note of the air is played. If in civilian dress and covered, they are required to stand and uncover at the first note of the air, holding the head-dress opposite the left shoulder until the last note is played. In inclement weather only the head-dress may be held slightly raised. There are no laws on this subject governing the conduct of civilians, but unwritten law and excellent custom suggest that civilians act with equal courtesy toward the national colors and anthem.

THE THOMPSON MALTED FOOD STOCK PLAN

To the Editor:—About the middle of March a good many medical men here were induced to buy stock in Thompson's Malted Milk Co. of Waukesha, Wis. I bought to the amount of $45 cash. Others bought more and some less—the stock certificate sent me was for. thirty shares at $1.50 per share.

The party who sold the stock was in town for at least two days. He told me that he was just out of New Orleans and had sold every doctor (not surgeons) of prominence in the place, gave the names and amount of stock taken and claimed that he had remained there while letters, etc., as to his reliability and that of the T. M. M. Co. was investigated. Said that he had cheerfully invited this investigation, etc.; said the Mayos used the malted milk exclusively in their hospital in Rochester; that the U. S. government had a big order for all the product they could get and preferred it to Horlick's or any other milk. Said that as soon as the doctors, who were preferred, bought stock it would be offered to the drug stores. None was offered to any here I am told.

I told him I did not like the scheme as it did not look all right to me, but that I'd take a few shares, but wanted to know just what the stock was going to pay—I couldn't pin him down to exact figures, but he said I could not possibly lose and would have a nice little side-line that would come in very handy as the company had no debts and had paid for its plant and was selling stock in this manner, interesting doctors instead of advertising in the medical journals. By doctor's owning stock they would recommend this milk as it was the best and purest anyway. He never did say just how much the stock would pay, but said that there was no possible way for an investor to lose any money.

Do you know anything about this company? The man who sold us the stock said that it would be in every drug store here right away. I haven't yet seen any. R. L. Randolph, M.D., Alexandria, La.

Answer.—Seven years ago physicians were told of the glowing prospects that might follow an investment in the Thompson's Malted Food concern; we have yet to hear of any dividends being paid. The Thompson Malted Food Company was discussed in the Propaganda Department, Oct. 24, 1914; it was again discussed in the Correspondence Department, April 28, 1917. A reprint of both these articles will be sent on receipt of a two-cent stamp.

THE BABINSKI TEST

To the Editor:—1. Who is, or was, Babinski? 2. What is the Babinski test? Henry Ketcham, Dallas, S. D.

Answer.—1. Joseph François Felix Babinski was born, Nov. 17, 1857, of Polish parents. He was graduated in medicine in 1885, and in 1890 was appointed physician to the Hôpitaux de Paris. He is noted for his original studies on the subject of brain diseases and the diagnosis and treatment of vertigo. He is a French neurologist and is living at the present time.

2. The Babinski phenomenon consists of a stimulation of the sole of the foot producing extension of the hallux (great toe) instead of flexion. The normal plantar reflex is one of flexion of the great toe, while Babinski's plantar reflex is one of extension. Sometimes, in testing for Babinski's sign, in addition to extension of the hallux, a fanlike spreading out of the toes is observed—*phénomène d'éventail*. The presence of the reflex indicates a disordered and usually degenerated condition involving the pyramidal tract. It is, therefore, of value in differentiating between functional and organic nervous diseases.

COMMUTATION AND INSURANCE IN NAVY AS WELL AS IN ARMY

To the Editor:—1. Do officers in the Navy receive commutation the same as officers in the Army? 2. Are Naval officers allowed to carry government insurance at the same rate, etc., as officers in the Army? 3. Where do I report for examination? Please omit my name.

A. R. W.

Answer.—1. Yes.

2. Yes.

3. You may write to the Office of the Surgeon-General of the Navy, or to The Journal office, requesting an application blank, which may be forwarded to the Surgeon-General of the Navy accompanied by a request for examination before the nearest examiner.

PHYSICIANS INVITED TO CONTRIBUTE INFORMATION ON HAY-FEVER RESORTS

To the Editor:—In order to furnish reliable information to the large number of inquirers, we are preparing a list of places in various parts of the country where hay-fever subjects may find temporary relief. Physicians are therefore requested to assist in this work by sending a list of places, in their state, having the reputation of being free—or relatively free—of hay-fever.

The United States Department of Agriculture and the members of our botanical department are preparing a list of localities in relation to hay-fever from a botanic standpoint, but the report of physicians on this subject will aid greatly in establishing, for the benefit of the medical profession and the public generally, definite information on this subject.

William Scheppegrell, M.D., Audubon Building, New Orleans,
President, American Hay-Fever Prevention Association.

To Arrest Paroxysmal Tachycardia.—According to a German writer, cited by *Hospitalstidende*, tickling the palate and throat, until vomiting is induced, will arrest an attack of paroxysmal tachycardia.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alabama: Montgomery, July 9. Chairman, Dr. S. W. Welch, State Capitol, Montgomery.

Arizona: Phoenix, July 2. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.

Colorado: Denver, July 2. Sec., Dr. D. A. Strickler, 612 Empire Bldg., Denver.

Connecticut: New Haven, July 9-10. Sec. Regular Bd., Dr. Chas. A. Tuttle, 196 York St., New Haven; Sec. Eclectic Bd., Dr. J. E. Hair, 728 State St., Bridgeport; Sec. Homeo. Bd., Dr. E. C. M. Hall, 82 Grand Ave., New Haven.

District of Columbia: Washington, July 9-11. Sec., Dr. E. P. Copeland, The Rockingham, Washington.

Maine: Augusta, July 2-3. Sec., Dr. Frank N. Searle, 776 Congress St., Portland.

Massachusetts: Boston, July 9-11. Sec., Dr. W. P. Bowers, Rm. 501-1 Beacon St., Boston.

North Dakota: Grand Forks, July 2. Sec., Dr. G. M. Williamson, Grand Forks.

Oklahoma: Oklahoma City, July 9-10. Sec., Dr. J. J. Williams, Weatherford, Okla.

Oregon: Portland, July 2. Sec., Dr. Herbert S. Nichols, 802 Corbett Bldg., Portland.

Pennsylvania: Philadelphia and Pittsburgh, July 9-13. Sec., Mr. N. C. Schaeffer, State Capitol, Harrisburg.

Rhode Island: Providence, July 11. Sec., Dr. B. U. Richards, State House, Providence.

South Dakota: Deadwood, July 9. Sec., Dr. P. B. Jenkins, Waubay.

Utah: Salt Lake City, July 1-2. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.

Washington: Tacoma, July 2. Sec., Dr. C. N. Suttner, 415 Old Nat'l Bldg., Spokane.

West Virginia: Wheeling, July 9. Health Com., Dr. S. L. Jepson, Masonic Bldg., Charleston.

New York March Examination

Mr. George M. Wiley, director, Examinations and Inspections Division, reports the written examination held at New York, March, 1918. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 123 candidates examined, 115 passed and 8 failed. The following colleges were represented:

College	Year Grad.	Total No. Licensed
PASSED		
Harvard University	(1918)	2
Columbia University	(1918)	40
Fordham University	(1918)	40
New York Homeo. Med. Coll. and Flower Hosp.	(1918)	4
University and Bellevue Hosp. Med. College	(1918)	29
FAILED		
Columbia University	(1918)	3
Fordham University	(1918)	3
New York Homeo. Med. Coll. and Flower Hosp.	(1918)	1
University and Bellevue Hosp. Med. College	(1918)	1

Nevada May Examination

Dr. S. L. Lee, secretary of the Nevada State Board of Medical Examiners, reports the written examination held at Carson City, May 6-8, 1918. The examination covered 13 subjects and included 100 questions. An average of 75 per cent. was required to pass. One candidate was examined, who passed. Five candidates were licensed through reciprocity. The following colleges were represented:

College PASSED	Year Grad.	Per Cent.
Rush Medical College	(1913)	93.4

College LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Georgia College of Eclec. Med. and Surg.	(1899)	Texas
Rush Medical College	(1903)	Illinois
Barnes Medical College	(1893)	Missouri
Dartmouth Medical School	(1899)	Maine
Temple University	(1914)	Penna.

Iowa Reciprocity Report

Dr. G. H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports that 12 candidates were licensed through reciprocity at the meeting held May 1, 1918. The following colleges were represented:

College LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Bennett Medical College	(1914)	Illinois
Chicago College of Med. and Surg. .(1909) Illinois;	(1915)	Nebraska
Chicago Medical College	(1877)	Wisconsin

Hering Medical College	(1907)	Illinois
National Medical University	(1902)	New Mexico
Northwestern University	(1914)	Illinois
Maryland Medical College	(1912)	New Hamp.
John A. Creighton Medical College	(1915) (1917)	Nebraska
Ohio Medical University	(1907)	Ohio
Jefferson Medical College	(1916)	Wisconsin

Medicolegal

Liability of Company and Physician Under Contract for Medical Services

(Sloss-Sheffield Steel & Iron Co. et al. v. Taylor (Ala.), 77 So. R. 79)

The Court of Appeals of Alabama affirms a judgment for $300 damages in favor of the plaintiff, Mrs. Taylor, and against the defendants, the company and the "company doctor," who were sued jointly of alleged failure to render medical services to the plaintiff. The court says that it appeared that the company deducted 75 cents each month from the wages of its unmarried employees, and $1 each month from the wages of its married employees, and in consideration of this amount the company obligated itself, in the case of a married man, to render, in case of illness, medical services to him, his wife, and family. The "company doctor" was employed by the company to render medical services to its employees, and their wives and families, under this agreement. February 9, the company deducted $1 from the wages of the plaintiff's husband, 90 cents being paid to the physician, and 10 cents being retained by the company. March 5, the plaintiff was taken ill, and the physician was repeatedly requested, on the 5th, 6th and 7th, to visit her, but each time refused to do so, though, acting on Mr. Taylor's statement of the nature of his wife's malady, he furnished some medicine or phenolated petrolatum and codein tablets to Mr. Taylor to be administered to his wife, stating that it was unnecessary to make a professional call. On the evening of the 7th, Mr. Taylor called in another physician. It developed that Mrs. Taylor was suffering from an abscess, and by the 10th, when the defendant physician did call on her, had so far recovered as not to be in need of the services of a physician, the abscess having burst. The defendant admitted having told Mrs. Taylor's sister that he would treat Mrs. Taylor if she would take her to her house; that he would not go to Mr. Taylor's house to see her; that he did not want to have anything to do with a man that would take a case away from him and take another physician without consulting him. This was before March 9.

The court holds that the husband was under a legal duty to provide medical services and attention for his wife, when needed, so far as his ability would permit; and his contract with the defendant to render such services to her was a contract for her benefit, and the breach of it gave her the right to maintain an action therefor in her own name, either for the breach of the contract or for the negligent failure, if such there was, to perform the duty arising out of the agreement. After the defendants had entered into the agreement, it was not permissible for them to refuse to perform their part thereof, because the husband exercised his right to call in another physician. The husband was under no duty to notify the company doctor that he would call in another physician, and he was under no duty to employ only such physician as was acceptable to the professional taste of the company doctor. When the defendants entered into a valid contract to render professional services to Mrs. Taylor up to March 9, as the evidence tended to show they did, the law required them to perform their contract, and render such professional services as might be required of them up to that time, and their nonperformance could not be excused because other professional skill was obtained without their consent, unless it appeared that the additional physician materially interfered with the defendants in the discharge of their duty. It was urged that there could be no recovery in this case because a contract made by a husband for medical services to his wife is a contract made for the benefit of the husband, since he is under a legal duty to provide medical services for his wife in case of illness, and therefore the wife is only incidentally benefited by such a contract. But the fact that the husband was under such legal duty was one reason why the wife was entitled to maintain this action in her own name. The contract had for its purpose the preservation of the wife's life and health by placing at her disposal the professional skill and services of the company doctor. The benefit to her was direct and substantial. This court would find it difficult to hold otherwise, and at the same time maintain its self-respect.

The court cannot say that the damages awarded were excessive.

Value of Services Is Question for Jury

(Young v. Lichtenberg (N. Y.), 168 N. Y. Supp. 616)

The Supreme Court of New York, Appellate Term, First Department, which reverses a judgment obtained by the plaintiff, a physician, says that he brought this action against the defendant for the value of medical services rendered to the defendant at his request. The plaintiff testified at the trial as to his services and as to their reasonable value. His testimony was not contradicted. At the close of the testimony the defendant moved to dismiss the complaint, and his motion was denied. The plaintiff thereupon moved for the direction of a verdict, and the court directed one in his favor for $157, the amount demanded in the complaint and which the plaintiff had testified was the reasonable value of the services rendered. Thereafter the defendant asked to go to the jury on the question of fact involved in the determination of the value of the services. This motion was denied. The defendant's request to go to the jury on the question of fact was not made too late, and the only serious question presented by this appeal was whether, in view of the fact that the plaintiff's testimony as to the value of his services was uncontradicted, there was any question of fact that the jury could determine. It was conceded that, in actions brought by attorneys for the value of professional services, the jury must assess the value of such services, even when there is no contradiction of the testimony adduced by the plaintiff as to the value of his services. Even though no case was cited in which the same rule has been announced by any court of this state in regard to services rendered by a physician, this court can see no possible distinction in principle as to the conclusiveness of expert opinion in regard to the value of professional services, in actions brought to recover for services rendered as an attorney and in actions brought to recover for services rendered as a physician. It follows that the judgment for the plaintiff should be reversed, and a new trial ordered, with $30 costs to the defendant to abide the event.

"Surgeon Not Liable for Sponges Being Left in Patient"—Standard of Diligence

(Cassingham v. Berry (Okla.), 168 Pac. R. 1020)

The Supreme Court of Oklahoma was reported in the Medicolegal Department of The Journal, Sept. 4, 1915, under the quoted heading, as having, in *Cassingham et al. v. Berry*, affirmed a judgment in favor of the defendant, and denied a rehearing, the action being one against a surgeon for having, as was alleged, negligently left gauze sponges in the body of the plaintiffs' mother, on whom the defendant had operated for the removal of the ovaries, which alleged negligence, it was charged, resulted in the death of the patient.

Now, on a rehearing, the court says that the one question involved in this case on which it has had misgivings was the doctrine that the degree of diligence that the law imposes on the surgeon is reasonable or ordinary care. The court earnestly requested and hoped that counsel in the argument on rehearing would give the court light on this question. But counsel did not cite, nor has the court been able to find, an instance in which the courts of law impose any standard of diligence on any one, other than reasonable and ordinary care. It is true this is a relative term. What would be reasonable and ordinary care under some conditions would be negligence under others. The importance, delicacy, hazard and moment of the undertaking all enter into the question as to what, under the circumstances, amounts to reasonable and ordinary care, and is a question of fact for the jury.

In the case at bar the evidence was that the defendant before beginning the operation counted the sponges to a trained nurse, who had been furnished by the husband of the patient, and repeatedly admonished her to keep an accurate count of the number of sponges inserted into the cavity, and did all he could to impress on her the importance of her accurately counting the number of sponges taken from the cavity, to insure that none that had been inserted remained in the cavity, and that, before closing the cavity, he asked the nurse if she had counted the sponges, and if all that had been inserted had been taken out of the cavity, and she assured him that she had counted them, and that they had all been taken out. It was also in evidence that this was an approved method, used by many leading surgeons, of keeping track of the number of sponges used in an abdominal operation.

And, under the law on diligence and the facts in this case, the court adheres to the opinion originally filed. All the justices concur.

The syllabus by the court says: The law imposes but one standard of diligence, and that is reasonable and ordinary care. This, however, is a relative term; and what would be reasonable and ordinary care under some conditions would amount to negligence under others. The importance, delicacy, hazard and moment of the undertaking all enter into the question as to what, under the circumstances, amounts to reasonable and ordinary care.

Remedy Where Board Revokes Certificate

(Knoop v. State Board of Health (R. I.), 102 Atl. R. 609)

The Supreme Court of Rhode Island dismisses a writ of certiorari—a writ to call up records or for review that was issued on a petition therefor. The court says the writ was sought for the purpose of quashing a record setting out the action of the members of the state board of health, whereby the certificate authorizing the petitioner to practice medicine and surgery in that state was revoked on the finding of the board that the petitioner had been guilty of gross unprofessional conduct and conduct making him an unfit person to practice medicine in the state. From the allegations of the petition it appeared, among other things, that the board served notice on him to appear before it on a certain date, and show cause why his certificate should not be revoked, and on or about said date gave him a bill of particulars in which it was alleged that he had been dispensing and distributing narcotic drugs in violation of the Harrison act, and in the United States District Court for the District of Rhode Island he had pleaded nolo contendre (I do not wish to contend) to an indictment found against him for violation of said act, and thereupon had been sentenced to pay a fine of $100; also that he had violated the provisions of the state statute by illegally prescribing various narcotic drugs, etc. In his brief the petitioner stated that he brought his petition for a writ of certiorari solely because the remedy which was open to him by way of appeal was utterly inadequate, because not only would he have to bear the burden of the cost of an appeal, but he must be without compensation and redress for what he styled the wrongful and summary procedure of the state board of health, and that his situation presented just such a case of unusual hardship as should appeal to the discretionary powers of this court for relief by certiorari.

Assuming, simply for the purpose of this discussion, that the contention of the petitioner was sound that the record of the indictment above referred to was not proper or adequate evidence to support the decision of the board, this court is of the opinion that the appropriate remedy of the petitioner was by appeal, and that no such exceptional case of hardship was presented as to warrant a review of the proceedings by certiorari. From the transcript of the testimony taken in the proceedings before the board of health, which was used by the parties to the hearing before this court on the motion and petition, it appeared that there was other evidence in addition to the record of the indictment produced before the board. It was true that the board apparently based its decision on the record of the plea of nolo contendere and sentence thereon; nevertheless there was other evidence presented to the board which was relevant to the issue, and in proceedings under the statute the remedy provided by appeal was simple and adequate; and this court cannot review by certiorari the question as to the adequacy of the evidence.

As the appeal vacates the proceedings before the board, so far as results go, the case on such appeal comes before this court for a trial on the merits of the case de novo (anew), and the fact that such trial may impose some additional expense on the petitioner does not differentiate this case from the ordinary case in which appeal is taken from the decision of an inferior tribunal which is claimed to be erroneous.

Society Proceedings

COMING MEETINGS

American Academy of Ophth. and Oto-Laryn., Denver, Aug. 6-8.
American Ophthalmological Society, New London, Conn., July 9-10.
Idaho State Medical Association, Seattle, July 17-19.
Montana Medical Association, Butte, July 10-11.
Washington State Medical Association, July 10.
Wyoming State Medical Society, Casper, Aug. 7.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Twelfth Annual Meeting, held at Albany, May 21-23, 1918

(Concluded from page 1977)

Etiology of Nephritis

Dr. Charles Jack Hunt, Clifton Springs: A group of nephritics, without other etiologic factor than bacterial toxins that formed chronic foci, were studied by recognized renal functional tests under control diet both before and after removal of discoverable foci. Culture study revealed the *Streptococcus mucosus* as the principal pathogenic organism. Other bacterial forms, in the order of frequency, were a diphtheroid organism, *Bacillus mitis, Streptococcus candidus, Streptococcus viridans,* and the pneumococcus.

DISCUSSION

Dr. Charles G. Stockton, Buffalo: These cases are due primarily either to infection alone or to a mixture of infection and metabolic defect. I have seen rather acute types of nephritis, with marked metabolic disturbances following infection, the infection producing anasarca and cerebral symptoms of a grave character, yet I have seen those disturbances pass off without any apparent after-effect on the kidney. I have in mind a woman who went through a gestation safely, who at one time seemed to be a hopeless nephritic. In her case I feel convinced that the reason for relief was the removal of the tonsils and subsequently the careful regulation of diet and studies of the blood.

Pathology of Nephritis

Dr. Herbert U. Williams, Buffalo: The pathology of nephritis is in a rather confused state. The old classification of nephritis is simple, but it has been modified considerably in the course of time to secure a more exact classification, and nearly every one divides nephritis now into tubular and glomerular. The chronic form of glomerular nephritis is held by many to be identical with chronic interstitial nephritis. There is great difficulty in separating these from the arteriosclerotic kidney, which resembles it closely in many cases. It is exceedingly difficult to draw a hard and fast line between the different types of nephritis not only clinically but also anatomically. To be perfectly safe, one should call every case of nephritis diffuse. The epithelium of the tubules undergoes postmortem changes. The kidney of a normal subject, which has had time to undergo postmortem changes frequently shows alterations that are quite difficult to differentiate from what is normally called cloudy swelling. The epithelium of the convoluted tubules is exceedingly sensitive, and in various conditions of bacterial toxemia or in poisoning by metals and other agencies there are marked degenerative changes in the epithelial cells. Albuminous degeneration of the epithelial cells, fatty degeneration and desquamation are seen frequently in this class of cases. It is seen in mercuric chlorid poisoning, in the acute toxemias like diphtheria and septicemia, in acute yellow atrophy of the liver, and so on. In many cases there are clear evidences of inflammation in the form of exudation into the tubules, and frequently leukocytes in and around them, and sometimes blood. Many of these cases show alterations in the glomeruli at the same time. The moderately pure type of this form of nephritis is more common than glomerular nephritis. There is a tendency to attribute the granular contracted kidney to earlier attacks of glomerular nephritis. The formation of new fibrous tissue in a kidney leading to chronic interstititial nephritis seems more and more to be attributed to the formation of fibrous tissue in response to a loss of substance rather than as a result of irritation.

We are not able at present to connect the pathologic anatomy very closely with changes in function. The classification of nephritis into glomerular, tubular, the late glomerular, the chronic interstitial, and the arteriosclerotic types is quite generally adopted, and the most interesting point is that of determining the relation of focal infection to glomerular nephritis by finding that it is caused by bacterial emboli and not entirely through the agency of toxins. Finally, a number of very high authorities are of the opinion that granular contracted kidney is closely connected with the arteriosclerotic kidney, and hard to distinguish from the latter, very largely the late results of an earlier glomerular nephritis, and possibly repeated attacks of glomerular nephritis. Mallory says that a patient who recovers from his toxemia and from his acute attack may suffer almost equally from the reparative changes that occur in the kidney.

Treatment of Chronic Nephritis

Dr. John R. Williams, Rochester: The most common type of kidney disease seen is that occurring in the middle aged adult who complains of some or all of the following symptoms: tiring easily, occipital headache, shortness of breath, high blood pressure, and little or no physical evidence of kidney disturbance except frequent and excessive urination at night. The blood is commonly low in urea, creatinin and phosphates. The blood sugar may be high. Edema is usually not present. Death is caused rarely by uremia, and more often by cerebral hemorrhage or failing heart. This is the well known cardiorenal type.

The next most frequently seen type is the middle-aged or even younger adult who may have pronounced eye symptoms, edema, low or high blood pressure, very little kidney reserve, urine loaded with albumin and casts, blood containing two or three times the normal amount of urine, a high blood sugar, increased blood creatinin, and phosphate retention. Death is commonly preceded by convulsions and the phenomena of uremia.

The last and much less frequently seen type is that of the young or middle-aged adult in whom the chief findings are edema, weakness, pallor, and not albuminuria, blood urea, and low sugar, perhaps lower than normal. The cholesterin content of the blood may be increased greatly; edema may or may not be influenced by the salt content of the diet. The functional capacity of the kidney is fairly normal to the usual clinical tests. The patient suffers very little headache or from other symptoms commonly seen in kidney failure.

The first and one of the most important steps in the treatment of any type of kidney disease is to rid the body of all focal infections. In the treatment of the cardiorenal type, if the patient is not harboring infection, the most important measure is rest, both mental and physical. If the patient has a good functional kidney capacity, he should be put on a low, simple, general diet. All chemical irritants and foods containing quantities of animal extractives, bacteria and bacterial products should be excluded from the diet. The patient should be allowed to have some meat and eggs. In severe cases of the second type the best measure is to put the patient at rest and give him a limited milk and fluid diet, as suggested by Karrel. I prescribe for the first few days 1 quart of milk, 1 pint of water, and either another pint of lime water or some salt of calcium, either the carbonate or the lactate, in half gram doses, several times daily. The tincture of iron or ferrous carbonate, in liberal doses, is also given. In the third type the diet should be more liberal and should contain a large amount of protein. As many as from 8 to 10 ounces of meat may be very helpful. Fluids should be restricted. If there is evidence of salt retention, its use should be curtailed; otherwise it may be sparingly permitted.

DISCUSSION

Dr. A. F. Chase, New York: Weakness, anemia, and deficiency of the blood can be overcome by large amounts of eggs, meat and albumin. I do not give a large protein diet owing to the number of cases of mixed types. In the interstitial type of nephritis, in which there is considerable retention of products of nitrogen metabolism in the blood, one should give a low protein diet to maintain body strength. There has been great danger in giving too low a diet. The pendulum has swung too far in efforts to eradicate sugar quickly from the urine and by lowering the amount of protein in the blood too quickly. For this reason I do not agree with Dr. Williams in giving too low a diet because one must consider the patient's body strength. There is a distinct advantage in giving mineral salts. A patient with interstitial nephritis should take a large vegetable diet, with an ample amount of mineral salts in the right proportion to overcome the tendency to anemia. In this type of cases profound anemia is not given sufficient attention. The reason the general practitioner does not give heavy vegetables in nephritis is that the patient will not take them; but one can give an intelligent patient vegetables if they are puréed, mashed thoroughly and put through a colander. In this way one can make use of a large variety of vegetables. I give calcium in adequate quantities to eliminate phosphates.

Dr. A. A. Jones, Buffalo: In discussing the pathology of nephritis we should bear in mind the changes that occur in the kidney in cases classified clinically as purely interstitial, purely cardiorenal, or purely parenchymatous. Some years ago we were apt to disregard the glomerular element in chronic nephritis and to look on the cardiorenal cases as primarily interstitial cases. The glomeruli do not suffer early from the changes occurring around the tubules. The interstitial changes follow cellular changes in the glomeruli, and there is destruction of many of the glomeruli before an abundant interstitial new formation occurs. In the treatment one should include careful consideration of the causes of the disease if they can be discovered, so that focal infections should receive attention as carefully as dietary regulations.

Capt. Thomas W. Jenkins, Albany: We have had several cases of acute nephritis among the soldiers. One patient, who died following an attack of mumps, had only albuminuria. The kidneys did not show any marked change. In one case that interested me more than any other the patient was a man who, through intensive training for a commission, became ill after paratyphoid inoculation and developed one of the worst cases of nephritis I have ever seen. His urine was loaded with epithelium, and he died in the second week of illness.

Dr. Albert E. Larkin, Syracuse: Many of these patients are affected in more than one part of the kidney, and for that reason each case demands individual treatment. It is difficult to lay down any hard and fast rules of treatment. All are agreed that the best treatment for them is the same as for arteriosclerosis, namely, prevention.

Dr. Joseph R. Wiseman, Syracuse: The work of Dr. Hunt is particularly praiseworthy. In those cases in which a streptococcus was found, Dr. Hunt thinks that the tonsil is a dangerous one and should be taken out, and according to his case reports he has obtained excellent results, although one now and then sees patients with chronic nephritis and diseased tonsils in whom the removal of the tonsils is not followed by improvement.

Dr. Herbert E. Sperry, Rochester: I should like to ask how often nephritis is caused by syphilis.

Dr. Weinstein, New York: I have always been under the impression that nephritis, like a degenerative process in any other organ, is due to some infection. In two or three generations of one family one will find that the offspring are apt to suffer from nephritis as if there was a specific liability of some particular tissue to disease. With regard to diet, I have put patients on a rather low protein diet and am never afraid of the color of meat. I allow a patient to have good steak or poultry, provided it is not taken in excessive quantity. The Karrel diet is a well etablished therapeutic procedure in cases of nephritis with edema. In cases with high blood pressure one should not forget to employ digitalis.

Dr. Albert A. Epstein, New York: There is a uniformity of opinion regarding the renal type of disease in which the disturbances are purely metabolic. There is no reason why the renal function should not be concomitant with the metabolic disorder, so that there are cases in which there are mixed conditions. In such cases the method of treatment must be somewhat different from the one set down originally.

Dr. Herbert U. Williams, Buffalo: In cases of congenital syphilis the body is found riddled with organisms and gummas in the kidney. In regard to focal infections, one method of great value would be to examine the urine for long periods for organisms.

Prognosis of Surgical Tuberculosis of Kidney

Dr. William F. Braasch, Rochester, Minn.: In considering nephrectomy for early unilateral tuberculosis, the factors to be considered are age, sex, coincident tuberculosis in other organs or tissues, the duration of the symptoms, the severity of the infection of the urinary tract, and whether there is or is not bilateral involvement. Renal tuberculosis occurs from 25 to 40 years of age. Beyond the age of 60 or 70 years renal tuberculosis is of rare occurrence. We have operated on three patients up to 10 years of age. In the meantime, we have seen forty cases in children up to 10 years of age, not operated on because renal tuberculosis in children is very frequently a part of a general tuberculosis. The children on whom we have operated were seen early, and tuberculosis was not found present elsewhere. It is customary not to operate on children at once, because the majority of patients sooner or later show other evidences of tuberculosis and their resisting power will be low.

The time to operate is between 25 and 40 years of age, as the mortality increases steadily with the advance in years. The greatest mortality occurs in patients from 50 to 70 years of age. The lowest mortality from operative intervention occurs in patients from 15 to 20. The influence of complications on the mortality is important. The majority of patients have evidences of tuberculosis in other organs of the body. In only 5 per cent. was the renal tuberculosis complicated by acute pulmonary tuberculosis. Ninety per cent. of the cases of renal tuberculosis had evidences of an old pulmonary tuberculosis. Of the cases of pulmonary tuberculosis complicated by renal tuberculosis, twenty-one in number, 40 per cent. terminated fatally, which is twice as high as the mortality from renal tuberculosis uncomplicated by pulmonary tuberculosis. However, if we had not operated on patients with both pulmonary and renal tuberculosis, they all would have died. It is inconceivable to think of a spontaneous cure of renal and pulmonary tuberculosis.

The removal of the epididymis when enlarged or markedly inflamed, with secondary infection, is unquestionably advisable following nephrectomy. It is our experience at the Mayo Clinic that the caseating kidney offers a much better prognosis and much less mortality than miliary tuberculosis. In miliary tuberculosis scattered over the surface of the kidney the mortality is almost twice as high as it is when caseation is present.

Dr. Benjamin S. Barringer, New York: It is essential not to operate on the kidney without the previous use of the cystoscope. The fact that one often sees enormous vessels of the kidney and comparatively infrequently notices hydronephrosis shows there is something wrong with the anomalous vessel theory.

Dr. Ernest Watson, Buffalo: The pyelogram is the only measure we can rely on with any certainty in making an absolute diagnosis in these cases, particularly if they do not show evidence of infection. Oftentimes a dilated ureter and dilated kidney pelvis will not give evidence without examination of the ureters.

Dr. George Stark, Syracuse: I recall sixty cases of renal colic with hydronephrosis in which symptoms disappeared following dilatation. In cases of pyelitis one can bring about more cures by dilating and irrigating the pelvis of the kidney than by lavage alone.

Dr. Wolf, New York: Tuberculous kidney is operable in the early stage, and the prognosis is excellent. I recall two such cases, one of which was a case of bilateral tuberculosis which I saw two years ago. The other was a large cystic kidney in which pressure on the right side was demonstrated, and the cystoscope showed a purulent secretion. I removed the kidney in the case of bilateral tuberculosis, and two years after the operation the girl was healthy. Cystitis is an early and a late symptom. It is the last symptom to disappear in tuberculosis of the urinary tract.

Dr. Joseph F. Shears, New York: Stricture of the ureter is more common than most practitioners admit and is probably a cause of hydronephrosis.

Trench Fever

Major Alexander Lambert, New York: Commissioner Murphy early last summer informed me that it was his desire I should build up as good and scientific an organization as it was possible to do. He formed a research committee. He obtained an appropriation of $100,000 and said we could use as much of this amount as in our judgment seemed best, without restrictions, and asked us to decide on what was best to be done. He obtained the cooperation of the Medical Corps of the British Army and of the French Army, and the three Medical Corps met every month as a research medical society. They have given to the American, British and French surgeons their best experience and ideas, and have placed our men in a position to go on with research work in medicine and surgery in 1918. Otherwise we should have had to work out and struggle over the same problems that the French and British have done before. This cooperation has been of the greatest help, and is one of the best things we could have done to solidify the Medical Corps and give aid to the army and surgeons that need it.

As to trench fever, its transmission and origin have been solved. Trench fever is a curious break-bone fever that has a sharp, shooting temperature. The temperature rises to 103 and 104 F., with aches of an intense character in the insertion of the muscles, and then it drops. Again, it rises for four or five days and takes on the character of a regular recurring fever. It cannot be told, except by blood cultures, from the recurrent infectious fever of Weil. No organism has been found for it. You cannot transmit it to any animal. We experimented with everything up to monkeys and were unable to produce the fever. We realized that we must ask for volunteers, and a curious thing is that some of the men who worked with General Gorgas in Cuba in connection with yellow fever and were volunteers there were with us. Colonel Ireland, who was on the research committee, worked out the line of research in conjunction with General Wood, and Colonel McCoy was chief of staff. Colonel Ireland took the necessary orders, asked for volunteers, and of the 500 men who offered to go, sixty were accepted, and within six weeks from that time, through experimental work, it was found that trench fever was transmitted by the bites of body lice. They worked with the body lice in the trenches and worked with the lice they secured from London. Trench fever was the cause of 10 per cent. of the English army in the last year being on the sick list when these men ought to have been in the trenches. No man dies of the fever, but it disables him for two or three months. This discovery has solved the question, and it saves from 8 to 10 per cent. of the active force. This the Red Cross has succeeded in doing.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

June, 1918, **15**, No. 6

1 *Methods Used in a Class for Undernourished Children. C. H. Smith, New York.—p. 373.
2 Infant Feeding: Calcium in Its Relation to Absorption of Fatty Acids. A. W. Bosworth, H. I. Bowditch and L. A. Giblin, Boston.—p. 397.
3 Nutrition and Growth of Newborn Infants. W. R. Ramsey and A. G. Alley, St. Paul.—p. 408.
4 Evidence that Summer Diarrhea is an Infectious Enteritis. J. Zahorsky, St. Louis.—p. 413.
5 Lymphatic Disease in Children Simulating Appendicitis; Report of Cases. H. deB. Barss, Ann Arbor, Mich.—p. 421.

1. Methods Used for Undernourished Children.—During the past few years attention has been repeatedly called to the fact that a large number of children in this country are undernourished. Nov. 1, 1916, a nutrition class was started in the outpatient department of Bellevue Hospital as an experiment to determine how much could be done to improve the nutrition of undernourished children when handled in large numbers. The methods used in this class have been worked out in the children's tuberculosis class and other classes at the Vanderbilt Clinic. The general plan which has been kept in mind has been to make a careful diagnosis, to correct remediable physical defects, to determine and correct any economic factors that have a bearing on the case, and to try to improve the hygiene and diet of the child by every possible means. A printed slip with directions as to the general care of the child and a diet list are given to every mother. At the first visit the attention of the mother and child is called to the food exhibit, as an aid to impressing on their minds the elements of a proper diet. The visual impression made on the mother and child adds tremendously to the significance of the printed list of goods given out on the diet list. Class talks are given frequently to groups of mothers. Mothers are urged to return once a week. In extreme cases, especially when there is marked anorexia, a complete rest cure is given. Weight charts are used for every child. A photograph is taken of every child in the class, and is pasted on the back of the weight chart. Home record sheets are used for the purpose of having the child or mother record what happens to the child each day. An analysis of 110 cases has been made to determine the results of the class experiment. It has been possible to make 57 per cent. of the children gain at 1.7 times the average rate for their ages, and 22 per cent. at about the average rate, or a total of 79 per cent. who have gained at or better than the average rate. Of the remaining 21 per cent., there is one or more easily ascertained reasons for the failure in every case. These results have been obtained under the most adverse circumstances. The problem of infant mortality has been solved in large part by means of classes for teaching mothers the care and feeding of infants.

American Journal of Medical Sciences, Philadelphia

June, 1918, **155**, No. 555

6 *Sensitized Vaccines in Prophylaxis and Treatment of Infections. R. L. Cecil, New York.—p. 781.
7 Character Study of Hemiplegic Epileptic. L. P. Clark, New York. —p. 796.
8 *Fractional Estimation of Gastric Contents: Effects of Antacid Medication on Gastric Acidity and Secretion. B. B. Crohn, New York.—p. 801.
9 Relapsing Fever Endemic in Colorado. J. J. Waring, Denver.—p. 819.
10 *Vaccine for Treatment of Bronchial Asthma; Report of Twenty Cases. J. M. Hutcheson and S. W. Budd, Richmond, Va.—p. 826.
11 *Atmospheric Air in Upper Digestive Tract. J. L. Kantor, New York.—p. 829.
12 Vital Stains and Central Nervous System. L. J. Pollock and W. T. Cluney, Chicago.—p. 857.
13 *Circulatory Reactions to Graduated Work in Normal People and in Those with Cardiac Insufficiency. T. B. Barringer, Jr., New York.—p. 864.
14 Perforated Gastric and Duodenal Ulcer. Statistical Report of Fifty-Nine Cases. F. J. Scully, Chicago.—p. 874.

6. Sensitized Vaccines in Infections.—Cecil employed sensitized vaccines in a series of forty-seven cases, which include twenty cases of prophylactic vaccination against typhoid and twenty-seven cases of therapeutic vaccination against gonococcus, streptococcus, *Staphylococcus aureus* and tuberculous infections. The sensitized typhoid vaccine produces a somewhat milder reaction than ordinary typhoid vaccine, and probably gives just as high an immunity. At the present time, however, the evidence for its superiority is not sufficient to justify the substitution of sensitized for ordinary vaccine in practice. In the various infections treated with sensitized vaccines the results were, as a rule, no better than would have been expected with ordinary vaccine. It happened that in a few instances recovery followed the administration of sensitized vaccine after treatment with ordinary vaccine had failed. This may have been due to the fact that larger doses could be employed without untoward symptoms. The chief objection to the general use of sensitized vaccines is the increased labor and time necessary for their preparation. At the present time it would seem desirable to limit their use to the treatment of infections in which there is hypersensitiveness to ordinary vaccines or in which the latter have proved inefficacious.

8. Effects of Antacid Medication on Gastric Secretion.—Crohn believes that the use of fractional doses of the alkalis distributed over the course of digestion is the most efficient and physiologic method for the employment of these agencies; for this purpose magnesium oxid is the most dependable and best suited salt. Based on these studies it seems very questionable whether prolonged use of the alkalies leads to any permanent diminution of the acid secretion of the stomach; in fact, it is as likely that the opposite effect is produced. A lasting relief of hyperacidity is not to be sought in antacid medication, nor in olive oil or atropin. It is more likely to be found in the proper regulation of diet and restriction of dietary errors as well as in the general control of the hygiene and manner of living of each individual patient under professional care.

10. Vaccine for Bronchial Asthma.—Certain observations of the writers, derived from the study of a considerable number of cases of asthma, have strongly suggested the possibility of the presence of the specific protein in the bronchial secretions of the patient himself, and also that this protein may be recovered in suitable form for use in bringing about immunity. The vaccine the authors use is made in the following manner: 1 c.c. of washed sputum is incubated in 10 c.c. of broth and 1 or 2 drops of guinea-pig serum for a period of forty-eight hours. At the expiration of that time the culture is standardized and killed by heat of 60 C. for a period of two hours. Further decomposition is prevented by adding phenol until a 1 per cent. solution results. This is cultured out to insure sterility of suspension. The vaccine is then diluted with normal saline until each cubic centimeter of the suspension contains 500,000,000 to 1,000,000,000 organisms. The initial dose is 5 minims and each subsequent dose is increased by 1 minim. The authors do not increase beyond 15 minims, although they may continue the treatment several weeks after this amount has been reached.

The effect of this plan of treatment has been observed in twenty cases of typical bronchial asthma. In twelve of these cases complete relief from attacks was experienced after from one to five injections of the vaccine and this relief has persisted up to the present time. The longest period of freedom from symptoms is sixteen months, the shortest six weeks. In five cases distinct improvement has been noted either in the frequency of the seizures, their severity, or their duration. In three of these cases improvement occurred only after a second vaccine had been made and administered at shorter intervals than the first. In two cases no effect at all was produced. One of these patients was an elderly man with emphysematous lungs and a history of asthma extending over twenty years. Asthma in the other case had followed injury to the chest and roentgen-ray examination revealed ununited fractures of several ribs. In one case administration of the vaccine seemed to increase the intensity of the paroxysms, a result which appeared to be explained by the fact that too long a time was allowed to elapse between injections.

11. **Atmospheric Air in Upper Digestive Tract.**—The results of his study have convinced Kantor that in general, gaseous accumulations in the upper digestive tract have atmospheric air as their basis. This air is introduced by ordinary swallowing or by an adaptation of the swallowing mechanism known as gulping. The differences between the swallowing of air and that of food depend to a large extent on the influence of gravity. As a result the swallowing mechanism shows certain peculiarities which are described in this paper. By means of fluoroscopic observations it can be demonstrated that the so-called swallowing sounds are produced by the entry of air into the stomach. A close study of the mechanism of deglutition based on a review of the literature and on original roentgen-ray observations shows the advantage of describing the complete act of swallowing as consisting of three instead of the classic two periods. These three periods are the buccopharyngeal, the esophageal and the cardiogastric.

13. **Graduated Work in Cardiac Insufficiency.**—Barringer claims that the occurrence of a delayed rise in systolic blood pressure after work indicates that the preceding work has either overtaxed or is on the point of overtaxing the heart's reserve power. The presence of a delayed rise can be determined by the infrequent method of plotting the pressure curve with almost as much certainty as by the frequent method. Experiments on normal people and on patients with cardiac insufficiency showed that no definite relation existed between the time required for the pulse rate to return to normal and the condition of the cardiac reserve power.

Arkansas Medical Society Journal, Little Rock

May, 1918, **14**, No. 12

15 Case Records for General Practitioner. S. W. Douglass, Eudora.—p. 237.
16 Early Diagnosis and Treatment of Tabes Dorsalis. L. Thompson, Hot Springs.—p. 239.

Boston Medical and Surgical Journal

May 30, 1918, **178**, No. 22

17 Roentgenology in American Army. F. Wheatley, Jr., North Abington.—p. 727.
18 Physician and Psychology. J. D. Taylor, East Boston.—p. 730.
19 Renal and Ureteral Stone. B. Tenney, Boston.—p. 731.
20 Mobilization of Knee Joint in Suspension Traction Treatment of Fracture of Femoral Shaft. G. A. Moore, Brockton.—p. 736.

June 6, 1918, **178**, No. 23

21 Congenital Pyloric Stenosis. W. E. Ladd, Boston.—p. 767.
22 *Clinical Study of One Hundred and Fifty Cases of Bronchial Asthma. F. M. Rackemann, Boston.—p. 770.
23 Control of Communicable Diseases. D. M. Lewis, New Haven, Conn.—p. 772.
24 Idiopathic Epilepsy. E. A. Tracy, Boston.—p. 775. To be continued.

22. **Clinical Study of Bronchial Asthma.**—One hundred and fifty cases of asthma were studied by Rackemann. The object of study was threefold: 1. To discover the cause of asthma or to identify the offending foreign protein in each patient. 2. To separate the patients having the same cause of asthma into groups. 3. To see whether there was one or more symptom or sign present in each patient and not present in normal nonasthmatic persons which might indicate a fundamental disturbance of anatomy or physiology in these patients as a group.

Each patient was studied by taking a very careful history, by making a complete physical examination, including chest, roentgenograms, special examination of the nose and throat by experts, electrocardiogram, and blood smears when necessary. In addition, skin tests, were made in a large proportion of the patients. Water-clear, sterile solutions of various protein substances were diluted so that each contained the same quantity of total nitrogen per cubic centimeter. These solutions were then injected intradermally. In normal nonasthmatic persons and in certain asthmatics, there was no result showing that the solutions were not irritating. Certain asthmatics gave positive tests. These consisted of a typical urticarial wheal surrounded by a zone of bright erythema, which appeared within ten minutes and was evident for perhaps forty-five minutes or even longer. From the history and skin tests, it has been possible to group 80 per cent. of the patients.

Twenty-eight per cent. of the cases had extrinsic asthma, while almost twice the number, or 53 per cent., had intrinsic asthma. Of the extrinsic cases twenty-four gave a definite history of aggravation of asthma during the summer months, and all but five gave a positive skin test to extracts of one or more pollens. In about half of all these cases the asthma ceases abruptly with the first frost. Sixteen cases gave a positive skin test to horse dander protein and gave histories at least compatible with, and often too obvious of, susceptibility to horses. Twenty-one other patients gave a positive skin test to horse dander protein but are not classed as horse asthmatics because there is nothing in their history or in their daily life which made it seem reasonable or even possible that horse dust or horse "emanation" might cause their asthma. Only two cases in this particular series gave a history of violent susceptibility to food.

Of the intrinsic cases in five derangement of the gastro-intestinal tract seemed to be a possible cause. In twenty-four cases the attacks of asthma came on only after a "cold" and recurred only at relatively long intervals. Winter asthma and chronic bronchitis are included in thirty cases of emphysema. Tuberculosis was found in six cases. Ten cases were associated with pregnancy (2), with catamenia (2), with enlarged bronchial lymph nodes (3), with lordosis (1), with obscure circulatory disturbances (2). One hundred and eighty-four differential blood smears made in 123 cases have shown a relatively constant eosinophilia averaging about 5 per cent., but there has appeared no significant difference between the eosinophilia in cases of extrinsic from that in cases of intrinsic asthma, nor any significant difference in the counts made during and between the asthmatic attacks in either divisions.

Cleveland Medical Journal

May, 1918, **17**, No. 5

25 William Beaumont, Pioneer Physiologist of North America. T. L. Patterson, Kingston, Ont.—p. 287.
26 Double Recurrent and Bilateral Tubal Pregnancies—Analysis of Literature and Personal Cases. A. P. Heineck, Chicago.—p. 306.
27 Case of Postoperative Obstruction. A. G. S. Louis, Cleveland.—p. 319.

Journal of Cutaneous Diseases, Chicago

May, 1918, **36**, No. 5

28 Ossification in Case of Scleroderma. S. Pollitzer, New York.—p. 271.
29 *New Form of Punctiform Keratodermia. S. I. Matsumoto, Japan.—p. 280.
30 Varioliform Macular Atrophy of Skin—Hitherto Unrecognized and Undescribed Atrophic Affection of Skin. M. L. Heidingsfeld, Cincinnati.—p. 285.
31 *Titration of Complement for Its Power to Combine in Syphilitic System. A. W. Stillians, Chicago.—p. 289.

29. **Punctiform Keratodermia.**—Matsumoto reports a peculiar type of punctiform keratodermia existing on the palms occurring in a girl, aged 19. On the palmar surface of the hands and fingers, strictly confined to the flexures of the joints, there were numerous miliary, horny, punctiform efflorescences, yellowish or light brownish in hue, from pinpoint to poppy seed in size. The primary lesions were minute, slightly elevated, at times scarcely visible papules, oval or roundish in shape, showing a slight degree of hyperkeratosis. They usually appeared isolated, but some coalesced to form irregularly shaped eruptions and often showed slight desquamation in the center, so that some were slightly cupped at the summit. But a comedolike horny plug or central conical plug was never seen. The palms showed no hyperidrosis. Diffuse keratosis was not present. No dilated sweat orifices were noticed; neither was an excentric growth of the lesion demonstrable. The distribution and arrangement of the lesions was quite peculiar and exhibited on both hands a well marked symmetry. The soles were intact. The eruption appeared early in her childhood (before she was 5 years of age), but the patient was unable to give the exact date of its outbreak and course, as there was no subjective symptom. The disease ran an extremely slow course, was beyond doubt. No hereditary taint was ascertainable. The patient was afflicted,

furthermore, with so-called tuberculids on the ears, and the extensor surfaces of the elbows and knees.

31. **Estimating Value of Wassermann Reaction.**—Stillians claims that the use of a mixture of glycerinized strong positive serums, titrated with each set of Wassermann tests as a positive control, gives an accurate idea of the strength of the Wassermann reaction. Titration of complement against the combination of antigen with a fraction of the titer of this positive control gives valuable information as to the combining power of complement in the syphilitic system. By the use of this method of titration, variations in strength of the Wassermann reaction can be minimized. Old complement is apt to lose its power to combine in the syphilitic system before its hemolytic value fails. Such variations are detected and estimated by the new method of titration.

Journal of Urology, Baltimore

April, 1918, **2**, No. 2

32 War Nephritis. P. Ameuille.—p. 51.
33 *Urinary Antisepsis: Studies of Antiseptic Properties and Renal Excretion of Compounds Related to Phenolsulphonephthalein. E. G. Davis and E. C. White, Baltimore.—p. 107.
34 Developmental Stages of Human Seminal Vesicles. E. M. Watson, Baltimore.—p. 129.
35 *Effects of Thorium and Other Substances on Renal Parenchyma when Retained. J. E. Burns and P. B. Hopkins, Baltimore.—p. 145.

33. **Urinary Antisepsis.**—The ideal internal urinary antiseptic must be a drug which is chemically stable, nontoxic and nonirritating to the urinary tract; which is antiseptic in high dilution in urine, regardless of the reaction of the latter; and which is eliminated unchanged in high percentage by the kidney. Davis and White claim that there is no such drug known. A consideration of the properties possessed by phenolsulphonephthalein, however, shows that this compound comes very close to filling all above requirements. The property possessed by phenolsulphonephthalein, by virtue of which is it so rapidly eliminated by the kidney, is by no means limited to this compound. Several other more or less closely related compounds show the same striking "renal affinity," and might also be of value in testing renal function were it not that phenolsulphonephthalein itself is so nearly ideal for this purpose. Compounds of the xanthone class, that is, phthaleins (though not necessarily sulphonephthaleins) in which there is an oxygen atom linking the two phenol groups, show a similar remarkable "renal affinity." The bromination of these compounds, both sulphonephthaleins and xanthones, almost completely prevents the excretion, but chlorination merely diminishes the excretion. Iodination prevents excretion or gives rise to elimination of the substance in a modified form. It has been possible to establish a certain relationship between chemical structure and renal excretion, and to predict, with a reasonable amount of accuracy, which drugs will and which will not be excreted. The synthesis of germicidal compounds, very closely related to the types excreted, has been accomplished; one of these compounds, rhodamin, was excreted and would have been satisfactory but for the interfering action of the urine; another compound "mercury fluorescein," has been found to be rapidly excreted and to produce germicidal urine. The authors hope that their experiments may call attention to the inadequacy of the urinary antiseptics in general use, and stimulate interest in the possibilities offered by synthetic chemistry. The investigation in being continued and the properties of various related compounds are being studied.

35. **Effects of Thorium on Renal Parenchyma.**—Burns and Hopkins found that thorium solution retained in the renal pelvis has no damaging effect whatsoever on the renal parenchyma. Cortical abscesses and pyelitis are due to the presence of infection and not to the retained solution. The cortical changes after the introduction of thorium solution are purely pressure phenomena and are the same as after either simple ligation of the ureter or the introduction of sterile water or normal salt solution into the renal pelvis. Collargol retained in the renal pelvis causes not only great damage to the kidney itself but systemic poisoning most often resulting in death. Ligation of the ureter either alone or after the injection of some solution causes hydronephrosis. The size of the hydronephrosis depends entirely on the development of the compensatory collateral capsular circulation.

Kentucky Medical Journal, Bowling Green

June, 1918, **16**, No. 6

36 Border Line Tonsils. W. B. McClure, Lexington.—p. 229.
37 Acute Intestinal Obstruction. G. A. Hendon, Louisville.—p. 232.
38 Diagnosis and Treatment of Trachoma. G. F. Doyle, Winchester.—p. 238.
39 Gunshot Wounds of Abdomen. D. W. Barrow, Lexington.—p. 243.
40 Gunshot Wounds in Civil Life with Treatment. W. Bach, Jackson.—p. 246.
41 Epistaxis, Cause and Treatment. W. J. Thomason, Newport.—p. 249.
42 Venereal Disease Clinic. S. Graves, Louisville.—p. 251.
43 What Physicians Who Are Not Accepted in Medical Reserve Corps Can Do. M. Pennington, Mount Vernon.—p. 258.
44 Talipes. J. A. Davis, Covington.—p. 260.
45 Radium: Some of Its Therapeutic Uses. L. Frank and L. W. Frank, Louisville.—p. 263.
46 Hypothyroidism. F. C. Askenstedt, Louisville.—p. 268.
47 Celiohysterotomy for Puerperal Eclampsia and Placenta Previa. W. H. Taulbee, Maysville.—p. 270.
48 Surgical Complications of Typhoid. R. L. Woodard, Hopkinsville.—p. 272.

Medical Record, New York

June 8, 1918, **93**, No. 23

49 Biographic Sketch of Four Physicians of Napoleonic Era. P. E. Bechet, New York.—p. 969.
50 Low Diastolic and High Pulse Pressure in Three Cases of Aneurysm of Aorta. C. E. Stewart, Battle Creek, Mich.—p. 972.
51 Weak Feet in Children. J. Grossman, New York.—p. 974.
52 Localizing Posterior Gonorrheal Urethritis. H. J. Millstone, Chicago.—p. 979.
53 Eugenics: Its Relation to Mental Diseases. J. J. Kindred, Astoria, L. I.—p. 981.

Nebraska State Medical Journal, Norfolk

May, 1918, **3**, No. 5

54 Precancerous Conditions of Breast. M. G. Wohl, Omaha.—p. 153.
55 Tuberculosis in Children. F. Clarke, Omaha.—p. 158.
56 Changes Necessary to Future Practice of Medicine. C. A. Roeder, Omaha.—p. 160.

Neurological Bulletin, New York

May, 1918, **1**, No. 5

57 Case of Double Primary Athetosis. M. A. Starr, New York.—p. 205.
58 *Case of Myxosarcoma of Temporal Bone with Extension into Posterior Cranial Fossa Presenting Unusual Symptoms. C. A. Elsberg, New York.—p. 207.
59 Ruptured Aneurysm of Right Middle Cerebral Artery. C. A. Elsberg, New York.—p. 210.
60 Borderline Psychiatry. S. R. Leahy, New York.—p. 212.
61 Social Maladjustment, Compulsion Neurosis in Young Man Turning Serious Activities of Life Into Bizarre Distortions. F. M. Hallock, New York.—p. 219.
62 Morphology of Gray Matter in Brain Stem of Vertebrates. R. Hoyt, New York.—p. 227.

58. **Myxosarcoma of Temporal Bone.**—Three years ago Elsberg's patient developed a large swelling in the left submaxillary region. A mass of glands were removed which was said to have been of a chronic inflammatory nature. After the operation she noticed that the left angle of her mouth "drooped" more than it had ever done before. She recovered satisfactorily from the operation and did not have any new symptoms until September, 1916. About one and a half years prior to making this report, after a severe mental shock, the patient began to have frequently headaches and attacks of dizziness. The headaches recurred very frequently and were uninfluenced by treatment. On the basis of the symptoms present at this time the diagnosis of a tumor in the left cerebellopontine angle was made, and the patient was operated on. The dura over the cerebellum was exposed by a typical bilateral suboccipital craniotomy. As soon as the dura covering the lower part of the left hemisphere was exposed by the removal of the occipital bone, considerable yellow gelatinous material began to extrude from the left posterior fossa, and after the dura had been depressed, the left posterior fossa was found to be entirely filled by this material. Considerable of the gelatinous matter was removed with a spoon. There was some bleeding from the jelly-like substance, and it was evident that the entire side of the fossa

was filled up by the mass. The wound was closed in the usual manner. The pathologist reported that the tumor was a myxosarcoma.

Aside from the rarity of this form of tumor in this location, the symptoms and clinical signs presented by the patient were of extraordinary interest and most confusing. In each attack of illness the left side of the body, and especially cranial nerves on the left side, were affected. An attack of smallpox followed by otitis, left behind a paralysis and atrophy of the left side of the tongue and diminished hearing of the left ear. A postpartum attack—probably one of cerebral embolism—added a paresis of the left side of the face and a weakness of the left arm with paralysis of the left cord. After the removal of glands from the left side of the neck, a branch of the left facial nerve was found to be completely paralyzed (ramus marginalis mandibulae). Finally, the patient developed symptoms which were clearly referable to the left lobe of the cerebellum and the left posterior fossa—ataxia, nystagmus, adiadochokinesis, hypesthesia over the distribution of the left trigeminus, complete paralysis of the left facial, complete nerve deafness in the left ear and loss of the normal caloric reactions on that side.

New York Medical Journal

June 8, 1918, **107**, No. 23

63 Pneumonia and Its Treatment. S. S. Cohen, Philadelphia.—p. 1057.
64 Self Treatment. E. E. Smith, New York.—p. 1063.
65 Treatment of Feebleminded. W. B. Cornell, New York.—p. 1067.
66 Acute Infectious Jaundice (Spirochetosis Icterohemorrhagica). C. Herrman, New York.—p. 1068.
67 Antitoxin Dose in Diphtheria. A. J. M. Treacy, Philadelphia.—p. 1071.
68 Fluoroscopy in Diagnosis of Chest Conditions. A. F. Holding and M. Greenwald, New York.—p. 1072.
69 Transplantation of Mucous Membrane of Mouth for Various Diseases and Burns of Cornea. R. C. R. Denig, New York.—p. 1074.
70 Plea for Modified Sluder Operation. I. Grushlaw, New York.—p. 1075.
71 Bloodless Tonsillectomy. P. V. Winslow, New York.—p. 1077.
72 Surgical Treatment of Penetrating Wounds of Thorax. H. M. W. Gray, Aberdeen, Scotland.—p. 1078.
73 Rehabilitation of Rejected. W. H. Sheldon, New York.—p. 1081.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

May 18, 1918, **1**, No. 2994

1 *Intravenous Injection in Wound Shock. W. M. Bayliss.—p. 553.
2 Ten Thousand Recruits with Doubtful Heart Conditions. S. R. Wells.—p. 556.
3 Epidemic Polioencephalitis; Report of Cases. C. H. Melland.—p. 559.
4 Nephelometric Estimation of Quinin in Blood and Urine. I. J. Lipkin and W. Ramsden.—p. 560.
5 *Sterilization of Skin and Other Surfaces by Mixture of Crystal Violet and Brilliant Green. V. Bonney and C. H. Browning.—p. 562.

1. **Intravenous Injection in Wound Shock.**—The general practical conclusion to be drawn from Bayliss' lecture is that the main factor in the successful treatment of wound shock is to ensure an adequate supply of blood—that is, of oxygen—to vital organs, especially to the nerve centers. This is most simply done by intravenous injection of gum solution, which does not appear to be, in most cases, inferior to blood. When very great hemorrhage has occurred, it would seem reasonable that blood transfusion should be preferred. A solution of gum arabic of 6 per cent. strength has been found, both in the case of wounded men and in lower animals, to maintain blood pressure indefinitely. It does not leave the blood vessels. Gum is quite innocuous, even in a volume equal to one half of the total blood volume, or an injection of more than a liter and a half in man. It produces no hemolysis or agglutination in man and does not increase the viscosity of the blood. Since it contains no protein, anaphylaxis in case of a later injection would not be expected, and, tested on guinea-pigs, was found not to occur. Gum is chemically a very inert substance and is not foreign to animal metabolism. It consists of derivatives of galactose and of arabinose. Galatose is a natural sugar present in milk. Arabinose appears in the urine in pentosuria and appears to arise from galactose by removal of carbon dioxid (Neuberg). Since commercial products contain small amounts of calcium and potassium salts, there is no need to add them. All that is necessary is the addition of 0.9 per cent. of sodium chlorid, and tap water may be used. The solution must be filtered through flannel or other convenient medium and then sterilized. A strength of 6 per cent. is probably the best for routine use. In practice, even 3 per cent. has been found greatly superior to saline solutions, but it is clear that its osmotic pressure is not the optimal one.

If the use of sodium bicarbonate is thought necessary, it is best given by stomach or rectum. But it has not yet been demonstrated that the symptoms relieved by bicarbonate would not be more effectively cured by raising the blood pressure. In principle it would seem to be a mistake to reduce the slight increase of acidity in the blood, since this is of value in stimulating the respiratory center, and there is no evidence that the slight increase of hydrogen ion concentration which is present in some cases of acidosis, but not always, is in any degree harmful in itself.

5. **Sterilization of Skin With Crystal Violet and Brilliant Green.**—The method which Bonney and Browning have employed as a routine for the last two and a half years, is as follows: The solution contains 1 per cent. of a mixture of equal parts of crystal violet and brilliant green dissolved in equal parts of alcohol and water. (The powder is dissolved in the undiluted spirit first of all and the water then added.) Six hours before the operation (except in certain cases) the solution is painted over the skin of the operation area; a compress of lint soaked in the same and covered by a sheet of waterproof batiste is then applied and kept in position by a binder or bandage. This compress is removed on the operating table and no further painting done. The result is that the skin is stained an intense violet black; the staining remains unchanged throughout the operation and, indeed, for a week or two afterward. This prolonged application of the antiseptic produces no irritation of the skin, or of more sensitive surfaces such as the vulva and vagina. The theoretical advantages of an antiseptic capable of being applied in such concentration and over such a period are obvious. The epithelial squames throughout the entire thickness of this layer become permeated with the dyes. Should a squame become detached and conveyed into the wound it carries with it a definite amount of a potent but practically nonirritating antiseptic, and the skin surface exposed is not merely initially sterilized, but remains antiseptic throughout the operation. The clinical results accord with the theoretical. The very marked superiority of violet green over the commonly used iodin was strikingly demonstrated in bacteriologic experiments.

Journal of Laryngology, Rhinology and Otology, London

May, 1918, **33**, No. 5

6 Intrinsic Cancer of Larynx and Operation of Laryngofissure. I. Moore.—p. 129. To be continued.
7 New Symptom of Labyrinth Fistula. S. H. Mygind.—p. 143.

Lancet, London

May 11, 1918, **1**, No. 4941

8 Teaching and Training in Hygiene. H. R. Kenwood.—p. 663.
9 *Tachycardia: Occurrence in Enteric and Other Fevers. H. F. Marris.—p. 667.
10 Splints for Use in Arm, Ankle and Leg Injuries. W. Pearson.—p. 670.
11 Liquid Tight Closure and Treatment of Wounds. W. H. Taylor and N. B. Taylor.—p. 671.
12 Bladder Drainage and Irrigation. J. MacMunn.—p. 672.
13 *Fistula in Ano. F. S. Edwards.—p. 673.

9. **Tachycardia.**—A large number of cases belonging to the enteric group of fevers examined by Marris were characterized during the febrile period by a relatively slow heart rate; some developed tachycardia gradually during convalescence, a few abruptly, while the minority were conspicuous by the presence of rapid heart action throughout the disease. The cardiovascular system was repeatedly examined. In some cases the tachycardia was cardiac in origin; in some

toxic in origin. In a third group it was a vasomotor tachycardia and in a fourth group it was a postural or atonic variety of tachycardia. In a series of 650 cases of the enteric group of fevers tachycardia of sufficient degree to attract attention was observed in 75 cases; 5 of these were judged to be cardiac in origin, 40 were due to vasomotor instability, 10 were of the postural variety, and the remainder presented features suggestive of Groups 2 and 3. During the course of this investigation similar observations were carried out on the cases of tachycardia occurring in other febrile disorders. In the fatal cases, such as diphtheria, cerebrospinal meningitis, miliary tuberculosis, scarlet fever, the tachycardia was found to be of the cardiac variety. The majority of the nonfatal cases belonged to the vasomotor group and occurred during the convalescence of such diseases as diphtheria, scarlet fever, trench fever, influenza and pyrexias of obscure origin. A few of the postural variety were encountered in obscure febrile disorders with gastro-intestinal signs and symptoms.

13. **Fistula in Ano.**—In Edwards' opinion the failures are due to one of three reasons. First and foremost, the topography of the fistula is not thoroughly recognized and thus a part of the fistula's track escapes division. Second, caries of the coccyx, or even of the ischium, is a not infrequent cause of a persisting fistula, and unless this is discovered and dealt with a cure is impossible. Third, tubercle; but although a certain small proportion of fistulas are tuberculous, it is astonishing how readily healing takes place after operation in the majority. When it does not the operation wound remains open and gaping, but the fistula as such may no longer exist.

Medical Journal of Australia, Sydney

April 27, 1918, **1**, No. 17

14 Practice of Anesthetics. E. H. Embley.—p. 341. To be continued.
15 Applied Comparative Anatomy. W. C. MacKenzie.—p. 344.

May 4, 1918, **1**, No. 18

16 Agglutination After Administration of Typhoid and Paratyphoid Vaccines. W. K. Inglis.—p. 363 To be continued.
17 Practice of Anesthetics. E. H. Embley.—p. 366. To be continued.

May 11, 1918, **1**, No. 19

18 Agglutination after Administration of Typhoid and Paratyphoid Vaccines. W. K. Inglis.—p. 383. To be continued.
19 Practice of Anesthetics. E. H. Embley.—p. 387. To be continued.
20 Prevention of Diphtheria. F. R. Legge.—p. 391.

Bulletins de la Société Médicale des Hôpitaux, Paris

March 15, 1918, **42**, No. 10

21 *Black Pleurisy. L. Galliard.—p. 266.
22 *Walled-Off Spinal Meningitis. E. Leroy and J. Paraf.—p. 270.
23 Wounds of Cauda Equina. G. Guillain and J. A. Barré.—p. 272.
24 *Valvular Disease in Soldiers. P. Lafosse.—p. 283.
25 *Functional Heart Disturbances in Soldiers. A. Clerc and P. Aimé.—p. 290.
26 *Epididymitis with Meningitis and Influenza. Beaussart.—p. 294.

21. **Black Pleurisy.**—The case reported teaches that the discovery of black blood in the pleura means an old hemothorax and that infection is probably already installed.

22. **Walled-Off Meningitis.**—Necropsy showed that the ventricles were intact, which explained the negative results of puncture trephining of the ventricles in the case of meningitis in a man of 42. The spinal cavity had evidently become partitioned off from the skull cavities, but this partitioning was much lower down. In future, before puncturing the ventricle, Leroy intends to puncture the spinal cavity in the thoracic or neck region.

24. **Valvular Disease and Active Service.**—Lafosse reviewing his experience with forty-seven cases of valvular disease in soldiers, comments on the surprising tolerance of the men with valvular disease. Thirty-nine of them are doing excellent work in the way of limited service; only 8 have been invalided. Josué stated that he has examined 2,419 men with valvular disease. He restricts to the auxiliary or limited service those who have never had any disturbance from their well compensated valvular trouble. With slight transient disturbance after physical effort, he advises the auxiliary service in the same way except that he specifies that the man must be kept under medical supervision and must not do heavy work. With a tendency to dyspnea, fatigue, etc., which will probably yield to repose and treatment, the man should be temporarily invalided. With any disurbances more than the above, discharge from the army is imperative. Laubry said that in passing judgment on valvular disease—other things being equal—the age over 35, recurring infectious diseases, narrow chest, dilatation of the heart, or persisting anomalies in the arterial pressure turned the scale in favor of permanent invaliding of the men. He does not pay much heed to functional tests. His early zeal in saving men with valvular disease for limited service has been gradually dampened by the unfavorable issue in certain cases, as the exigencies even of the limited service impose a strain at times on the men, and the specialist cannot follow them about.

25. **Functional Heart Disturbances.**—Clerc and Aimé remark that a serious obstacle to the recovery of men with functional heart disturbances is often found in the men's conviction that they have organic heart disease; possibly they have been so informed by some physician. In 88 of these purely functional cases, the label had been mitral insufficiency (13); endocarditis (8); myocarditis (4), or aortic lesions (2), besides a number called merely "heart disease," but Clerc and Aimé were unable to detect any organic lesion. These divergencies are due, they say, to the exaggerated importance ascribed by some to a few fleeting extrasystoles or respiratory arrhythmia, or misinterpretation of the inorganic murmurs which were found in 58 per cent. of the men. They reiterate that a murmur, the organic character of which is not evident, does not, in itself alone, testify to a valvular lesion. In deciding whether the man is fit for duty, they lay great stress on the general state of the strength, as the strength of the heart is often only the reflection of this. They stress further the response to repose.

26. **Orchi-Epididymitis with Meningitis and Influenza.**—Beaussart has noticed that infectious diseases later are liable to cause meningeal reactions when the person has passed through meningitis at any time. In a case described, bilateral orchi-epididymitis developed in the course of meningitis and again, a year later, in the course of influenza with severe meningitic symptoms.

Journal de Chirurgie, Paris

May, 1918, **14**, No. 4

27 *Trench Foot. V. Raymond and J. Parisot.—p. 329.
28 Puncture of Brain after War Wounds. C. Villandre.—p. 364.

27. **Trench Foot.**—Raymond and Parisot have found several varieties of fungus in the local lesions, blood and organs with trench foot, and they have been able to reproduce with them similar lesions in animals. Some induce, alone, similar lesions; others require the predisposing influence of wet and cold. Trench foot therefore is the result of infection of the organism by mycelian molds in the soil, which become parasites and acquire pathogenic properties under the influence of stagnation in cold water. Treatment based on this assumption has cured 99.6 per cent. of the men without loss of tissue. In prophylaxis, the main thing is to keep the feet dry; when this is not possible, to soap them well with a medicated soap—100 gm. sodium borate and 25 gm. pulverized camphor in 1,000 gm. soft potash soap. The feet and shoes are dusted with talcum containing 2.5 per cent. camphor. Greasing with grease containing 2.5 per cent. camphor may also be useful, but the main reliance is on the soaping, repeated as often as possible when conditions invite trench foot. Among the 2,861 cases in one ambulance, only 5 per cent. of the 1,098 blacks and 5 per cent. of the 242 Arabs suffered any loss of tissue, and only 0.04 per cent. of the 1,521 French soldiers. The article is accompanied with 28 illustrations or case charts.

Presse Médicale, Paris

May 2, 1918, **26**, No. 25

29 *Primary Suture of War Wounds. G. Gross.—p. 225.
30 *Chronic Enteritis and Coprology. R. Goiffon.—p. 227.
31 Treatment of Furunculosis with Lappa. R. Burnier.—p. 229.

29. **Primary Suture of War Wounds.**—Gross' ambulance cares only for the more severely wounded, and since the system of primary suture has been systematically applied, the mortality has fallen to 10 per cent. He reiterates that every war wound which does *not* contain the streptococcus should be sutured as the routine measure. The wounds with the streptococcus look differently; the man's face is thin and drawn, the pulse fast, and there is no appetite. The aspect of the ward with streptococcus cases is quite different from that in other wards. It *is indispensable*, he emphasizes, to isolate the wounded who present the streptococcus, as this is the only *infection* to be feared from the standpoint of early suture. Experience is confirming more and more that anaerobes are unable to proliferate in a living body unless they *find* devitalized tissues with one or more aerobes. With ordinary aerobes, the *process is localized*; with the staphylococcus it slowly spreads, but with the streptococcus it spreads rapidly and may assume a fulminating form. As soon as the devitalized tissue has all been excised, he sutures at once while waiting for the bacteriologic findings. If ordinary aerobes are found, he leaves the suture unmolested. With the staphylococcus, he keeps a special watch over the wound to see if slow *putrid infection* is becoming installed, cutting a thread or two at need. If the streptococcus is found, he removes the suture at once, opens up the wound anew, and by successive clearing out of devitalized tissues combats the putrid fermentation. The anaerobes do not start trouble until about the thirtieth hour, but the bacteriologic findings are available by the sixth hour. When the primary suture was not made, he sutures the second or third day with ordinary *aerobes*. *With* the staphylococcus he *waits* for its regression, from the fifth to the eighth day. With the streptococcus, he waits for the spontaneous vaccination of the organism. This occurs on an average the twenty-first day, but may be earlier. It is manifested by a drop in the temperature, but does not become definite until there is no *longer* any general reaction or the streptococcus has *entirely* disappeared. In Gross' experience 78.3 per cent. of the wounds were sutured at once, and 88.8 per cent. of the sutured wounds healed by primary intention.

30. **Chronic Enteritis.**—Goiffon insists on the importance of examination of the stools as the indispensable aid to clinical and roentgen study of every case of inflammation in the small intestine, disease of the liver and pancreas, chronic disease of the cecum, fermentation diarrhea, mucous colitis, left colitis and sigmoiditis, intestinal ulceration, and every case of colitis of parasitic origin; also for determination of the enteric origin of certain forms of gastric dyspepsia, and of the gastric origin of certain forms of enteritis, and in differentiation of factitious and of unrecognized bowel trouble. Each of these groups he defines and describes, insisting on the importance from the military standpoint of prompt diagnosis and treatment. In wartime we must cure quickly or return the man to civilian life.

Clinica Chirurgica, Milan

May, 1918, **25**, No. 5

32 *Correction of Paralytic Talipes. A. Guaccero.—p. 449.
33 *War Wounds of Bladder. G. Mioni.—p. 473.
34 War Wounds of Knee. G. Razzaboni.—p. 486.
35 War Wounds of Skull. M. Sertorio.—p. 500.
36 *Reinfusion of Extravasated Blood. R. Alessandri.—p. 504.

32. **Tendon Plastics to Correct Paralytic Talipes.**—Guaccero refers to paralytic deformity in the domain of the external popliteal nerve left by poliomyelitis. He has done a plastic operation of the kind on tendons in thirteen cases of severe equinus varus. Healing was by primary intention in all and the outcome has been extremely satisfactory in eleven of the cases. The ultimate results in the other two cases are not known. He utilizes the gastrocnemius and soleus by joining them to the tendons of the paralyzed antagonist muscles. By this means the foot is brought to some extent under muscular control and is held in an approximately normal position. He exposes and slits the Achilles tendon into three strips, shortens the dorsal flexor tendon, and draws one strip of the Achilles tendon through to the dorsum of the foot, and then reconstructs the Achilles tendon with what is left, as he explains with illustrations.

33. **War Wounds of the *Bladder*.**—Mioni relates that he has seen only five cases of wounds of the bladder amenable to treatment among the 4,500 wounded soldiers that have passed through his field hospital. The others with bladder wounds succumbed to associated wounds. He found packing the bladder with gauze useful in arresting hemorrhage.

36. **Reinfusion of Extravasated Blood.**—Alessandri quotes Kreuter's case in *which a liter* of *blood* from the ruptured liver was injected into a *vein in* the arm. Over 2 liters of blood had been *taken from* the abdominal cavity and the blood had stood outside the *organism* for a half hour before the *infusion*. The immediate results were surprisingly good, but there were other wounds which soon proved fatal. Elmendorf has also reported a *similar* case, reinjecting the blood drawn from a hemothorax, and the man recovered. Cases are on record in *which obstetricians* have successfully reinjected blood from the hemorrhage with extra-uterine pregnancy. The *blood in all these* cases seems to have been defibrinated; it did not display *any pyrogenic property*. The blood from a wound of the liver, spleen, lungs, kidneys, heart or large vessels may be *regarded as* practically sterile. Even if it does contain some *germs*, the blood itself injected with them is the most effectual *means to* combat them. Of course, perforation of the bowel *or the* presence of a foreign body, scrap of clothing, etc., would enhance the danger, and unfortunately these *conditions predominate* with war wounds. But the successes reported by Thies and Lichtenstein with tubal abortion hemorrhage have demonstrated *that* theoretic preconceptions need not render one *too timid*.

Policlinico, Rome

May 5, 1918, **25**, No. 18

37 *Peritonsillar Abscess. G. Bilancioni.—p. 413.
38 *Lesion of Nasal Septum in Cocain Addicts. G. Turtur.—p. 417.
39 War Wounds of Recurrent Nerve. C. Chiri.—p. 419.

37. **Peritonsillar Abscess.**—Bilancioni remarks that phlegmons *close to the tonsil* are rather frequent in soldiers, so that he has had opportunity to study quite a number of them. He *has become* convinced that the Killian, Lemaitre and Ruault technics do not answer *the purpose* of radical treatment so well as to cut out the upper half, at least, of the tonsil. This ensures complete *drainage*; the lower portion of the tonsil can be left unmolested. The anatomic conditions do not favor extension of the phlegmon downward, while the conditions around the upper part of the tonsil *invite retention* of pus. This is the cause of the frequent relapses with other technics.

38. **Nasal Lesion in Cocain Addicts.**—Turtur has found necrotic ulceration of the septum common among those who snuff cocain. It develops early, within two or three months, and often entails perforation. This is liable to be attributed to some constitutional disease if the addiction is not known, and recruits have been rejected on this account alone, the history of the cases not being brought out clearly enough to explain matters.

Brazil-Medico, Rio de Janeiro

Feb. 23, 1918, **32**, No. 8

40 Eugregarina Parasites of Brazilian Arthropods. II. C. F. Pinto. —p. 57.
41 Medicolegal Study of Lesions of the Hymen. O. Freire.—p. 57.

March 9, 1918, **32**, No. 10

42 Physiology and Pathology of Menstruation. J. Adeodato.—p. 73.

March 16, 1918, **32**, No. 11

43 Ciliated Protozoa Found in Mammals. G. Hasselmann.—p. 81.
44 *Medicolegal Study of Epinephrin Content of *Suprarenals*. O. Sampaio.—p. 81. To be continued.

44. **Epinephrin Content of Suprarenals in Sudden Death.**—Sampaio writes from the Instituto Rodrigues at *Bahia* to describe tests made of the epinephrin content of *the* suprarenals as a means of estimating whether or not *death had* occurred suddenly. He has modified the technic *devised* by Cevidalli and Leocini for the purpose, using a *colorimeter* arrangement, with potassium chromate.

Cronica Medica, Lima, Peru

March, 1918, 35, No. 657

45 *Serotherapy for Vomiting of Pregnancy. R. F. Melgar.—p. 65.
46 Arteriosclerosis and Angina Pectoris of Alcoholic Origin. E. Odriozola.—p. 71.
47 Geographic Distribution of Leishmaniasis in America. E. Escomel. —p. 76. Continuation.

45. **Serotherapy for Uncontrollable Vomiting of Pregnancy.**—Melgar reviews the scanty literature on the treatment of the uncontrollable vomiting of pregnancy by subcutaneous injection of serum from another pregnant woman. A number of striking cases have been reported by Mayer and Linser, Fieux and others, and Melgar adds two more to the list. He injected 10 c.c. of serum from a healthy pregnant woman, near term, following with a second or third injection of 15 or 20 c.c. at two or three day intervals. One patient was a primipara of 22, the other had borne several children, and in both the vomiting had persisted rebellious to all other measures. The improvement was pronounced in a few hours. The pulse grew slower, the vomiting less severe and less frequent, and disappeared completely by the third day. Melgar cites further three cases published by Freund, Fieux and Udaeta in which normal horse serum cured a dermatitis or incoercible vomiting in a pregnant woman, but he had no success in the one case in which he used horse serum.

Siglo Medico, Madrid

March 23, 1918, 65, No. 3354

48 Suggestions for Reform in Medical Education. V. Prieto.—p. 221.
49 *Typhus in Portugal. V. M. Cortezo.—p. 225. To be continued.

March 30, 1918, 65, No. 3355

50 *Trauma of the Eye. E. Wieden.—p. 242.
51 First Known Case of Beriberi in Spain. F. F. Martinez.—p. 245.
52 Climate in Treatment of Pulmonary Tuberculosis. G. Trivino. —p. 248.
53 Extraneous Modifications in Syphilitic Papule, Sicilia.—p. 249.

49. **Typhus in Portugal.**—Dr. V. M. Cortezo was sent recently by the Spanish government as a member of a commission to investigate what the Portuguese authorities are doing in stamping out the epidemic of typhus at Oporto, in northwestern Portugal. The disease is not confined to the poorer classes. There was a fatal case in the hotel where the commission was lodging. Cortezo's report extols the hospital arrangements and the work of the Portuguese public health service in general, but the war and other recent circumstances have brought conditions of extreme poverty to the towns investigated. Of Oporto, Cortezo says: "There are few cities that can compare with this in respect to its receptibility for an epidemic of the kind. Poverty and pauperism, with all the evils in their train, grip the population, without food, without clothing, with detestable alimentation and without habits of cleanliness. About a third of the populace live in small, walled-in communities, promiscuously with domestic animals. These groups of dwellings without ventilation or light are called *ilhas,* probably from the Latin *insula.*" In one of these *ilhas* he saw twenty-three persons sick with typhus, without care of any kind till they were rushed to the hospital. As Portugal is small and there is much traffic throughout, the disease soon spread to other points, notwithstanding the efforts of Ricardo Jorge, chief of the public health service. Several cases have developed among the physicians and subordinates of this service, but none have proved fatal. The nurses to care for the sick are recruited from those who have recovered from the disease. The mortality was only 10 per cent. at the time of his visit, but later reports from Vigo newspapers, as cited by the *Siglo Medico,* state that on a recent Sunday there were 100 new cases and all proved fatal. There were 400 sick in the hospital when Cortezo visited it. He was impressed with the nonsusceptibility of infants; mothers nursed their babies throughout the disease and the infants did not contract it. The hospital service is supplemented by convalescents' homes, one of which, with capacity for 200 patients, is in an outlying suburb. The commission emphasizes the necessity for a sanitary convention between Portugal and Spain as there is constant intercourse between the two countries, many workmen crossing the international bridge to their daily work.

50. **Trauma of the Eye.**—Wieden discusses what the practitioner should and should not do when called in case of trauma of the eye. In the majority of cases in rural districts of loss of vision from a simple erosion of the cornea or slight penetration of a scrap of dirt or stone or vegetable fiber, vision might have been saved if it had not been for infection of the lacrimal passages prior to the accident. The warmth, moisture and darkness enhance the virulence of germs in the obstructed lacrimal duct and in the lacrimal gland, and infection soon spreads to one or both eyes. On compressing the region of the lacrimal duct, a mucous or purulent fluid may exude from the lacrimal point or the sac forms a small tumor, like a cyst, the relaxed walls having lost their elasticity. Injection into the lacrimal point of physiologic salt solution, colored with methylene blue, or instillation of a 5 per cent. solution of a silver preparation will show whether the lacrimal duct is permeable, after the nostrils have been plugged with cotton, the head bent forward. The upper surface of the cotton will show the stain.

Wieden reiterates impressively the importance of every affection of the lacrimal passages as liable to doom to blindness in case of casual and otherwise harmless injury of the eye. Physicians everywhere should be on the lookout for lacrimal trouble, and educate the public in the peculiar dangers of even slight injuries of the eyes with infection installed in the lacrimal sac. When the lacrimal duct is freely permeable, the physician can soothe the pain by instillation of a few drops of a 2 per cent. solution of cocain, having the eye kept closed for a few minutes, then rinsing freely with physiologic saline or a weak antiseptic to clear out all foreign particles, concluding by applying petrolatum with a little boric acid and methylene blue. This lubricates and isolates the eye, and a dressing is then applied. The treatment after this belongs to the specialist. When the lacrimal duct was found obstructed, he always obtained good results from instillation of a few drops of optochin, as this has a specific action on the pneumococcus, the microbe usually responsible for lacrimal infection. When this drug is not available, he instills a 0.5 per cent. solution of zinc sulphate, and applies medicated petrolatum, but refrains on principle from bandaging the eye, as the secretions should have free outlet. He recalls to the practitioner that a magnifying glass is very useful in examining the eye for foreign particles.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

April 6, 1918, 1, No. 14

54 Electrocardiogram Varies with Speed of Impulse. S. de Boer. —p. 928.
55 *Convalescence Eosinophilia. D. Klinkert.—p. 941.
56 History of Medicine in the Netherlands. D. Schoute.—p. 945.
57 *Urticaria from Muscular Exertion. G. A. Prins.—p. 952.

55. **Nature of Anaphylaxis and Convalescence Eosinophilia.**—Klinkert remarks that the eosinophil count seems to run the same course in all infectious diseases. The eosinophils grow less in numbers as the disease progresses, until the acme has been reached and passed. Then they increase in numbers until the eosinophil count is above normal, and this post-crisis eosinophilia persists for some time after convalescence. He recalls that local eosinophilia accompanies the secretion of digestive ferments, and this suggests a connection between the normal digestion of food and the parenteral digestion of the invading bacteria. Convalescence eosinophilia may thus be regarded as an index of the secretion of ferments destined to digest the bacteria. The secretion of the gastro-intestinal digestive ferments is under the control of the autonomic nervous system, and the secretion of the ferments to digest the bacteria is likewise under the control of this nervous system. This plausible assumption is confirmed by the phenomena of anaphylactic shock. This shock is not the result of the circulation of the toxic split products of the albumin antigen, but these products circulating in the blood irritate the autonomic nervous system. This irritation is gradual and remains latent until the sudden introduction of a new unit of antigen upsets the precarious balance, and the anaphylaxis phenomena develop. Anaphy-

laxis is a cumulative toxic action from antigen. On account of the suddenness of the nervous discharge, the ferments are unable to aid efficiently in time. The anaphylactic shock may be defined as the baneful *artificial* caricature of the normal crisis. The eosinophilia in both is the index of the irritated condition of the autonomic nervous system. Postfebrile bradycardia may also be regarded as a phenomenon on the part of this nervous system.

Further testimony in this line is offered by recent research (Hirschstein, 1917) which has apparently demonstrated that when gastric juice and intestinal juice are formed under the influence of the vagus nervous system, a large amount of uric acid is formed at the same time. There is probably a similar formation of uric acid when specific immunity ferments are secreted under the influence of the autonomic nervous system. The urine in pneumonia on the day of the crisis contains an abnormally large proportion of uric acid. This has hitherto been ascribed to the destruction of leukocytes during resorption of the pneumonic exudate. But Klinkert thinks that this increased uric acid content is connected with the secretion of the specific antibodies. It is observed with other infectious diseases as well, at the turn for the better. In a case of typhoid, for example, the uric acid content of the urine jumped from 0.790 to 1.031 gm. at defervescence; in a case of pneumonia, from 0.815 to 1.495 gm. This increased uric acid content and the eosinophilia are thus, each of them, a phenomenon indicating the onset of convalescence. There is no retention of uric acid during fever; in fact, fever and hyperuricacidemia exclude each other. But as the temperature drops, uric acid accumulates in the blood, and is thrown off in the urine. In conclusion he reiterates the close analogy between the normal food-digestion process, with its secretion of digestive ferments, accompanied by eosinophilia and formation of uric acid, and the immunization process, with its specific secretion of ferments, its convalescence eosinophilia, and the uric acid output at the crisis. The participation of the autonomic nervous system in both processes sustains the assumption that gout can be regarded likewise as a neurosis of this system. This assumption is given a solid basis by the development of true gout in joints during convalescence from pneumonia and other infectious diseases.

57. **Urticaria After Muscular Exercise.**—Prins' patient is a girl of 15 who develops typical itching urticaria regularly after a dancing lesson and also after running or other muscular exercise. Dermographism is pronounced, as also a tendency to orthostatic albuminuria. No cause for the urticaria can be discovered unless it can be ascribed to toxic action from poisons generated in the muscles during muscular exercise. He ordered complete abstention from dancing and other exercise, and gave phosphorus and cod liver oil or calcium and tonics. The tendency to urticaria was thus broken up, and after the end of six months the restrictions were removed, without return of the urticaria, except one mild attack after hard running one hot day. He has since encountered a second case. This is in a physician and an emotional factor, besides the muscular effort, is evident in this case.

Ugeskrift for Læger, Copenhagen

April 18, 1918, **80**, No. 16

58 *The Vitamins. E. Madsen.—p. 613.

April 25, 1918, **80**, No. 17

59 Indications for Colloidal Silver. H. I. Bing.—p. 653.
60 *Case of Anaphylaxis. Kjelgaard.—p. 657.
61 *Duplicate Cases. O. Hamburger.—p. 658.

58. **The Vitamins.**—Among the practical points emphasized by Madsen is that a lactating woman must have food rich in vitamins. The lack of them may be responsible for certain pregnancy disturbances, uncontrollable vomiting, distaste for food, etc. As rachitis develops predominantly in the artificially fed, the lack of vitamins in the cow's milk or their destruction by boiling the milk, seems a plausible factor in rachitis. We do not know yet whether the scarlet fever virus, for example, survives moderate pasteurization. If the milk has to be sterilized during an epidemic, provision should always be made for supplying vitamins in some other form, meat juice for young infants; potato purée, or egg yolk for older children. In digestive troubles we must beware of not letting the diet get too poor in vitamins, as a diet that makes little demands on the digestive organs is generally poor in vitamins. Desiccation also destroys vitamins in fruit, vegetables, etc. This explains why an antidiarrheic diet keeps the patient so languid. The tea, rice water, etc., are peculiarly poor in vitamins, and special measures are necessary to correct this. A surplus of vitamins reduces the calory demand. Tagaki found that the men in the Japanese fleet gained in weight when the rations were modified to include more vitamins although it represented fewer calories. In the Danish prisons, when the bread ration was reduced and barley porridge given instead, the men gained in weight. Barley is richer in vitamins than rye and wheat.

Madsen warns that a lack of appetite is often the first symptom from a deficit in vitamins. He thinks there is much to suggest that a vitamin deficit is a factor in chlorosis anemia, neurasthenia, vasomotor disturbances, etc. In fevers, convalescence, etc., the necessity for an ample vitamin supply is imperative. It is possible that the mysterious benefit from cod liver oil may be due to an exceptional vitamin content. The commercial infant foods on the market are completely free from vitamins, and they must be added from some other source. In institutions where the food is cooked in large portions at a time, there is liable to be a deficit in vitamins.

There is no doubt, he adds, that beriberi occurs much more commonly in all countries than has been hitherto appreciated, but it is not recognized, as no one looks for it outside the tropics. The war edema without albuminuria may be a rudimentary form of beriberi. It is possible that this may be true also of many cases of peripheral neuritis and heart weakness. Among the peculiarly vitamin-rich foods he lists butter and cheese, egg yolk, raw meat and fresh meat juice and soup. Steamed meat and fish retain their vitamins better than when boiled. Meat extracts are free from vitamins. In grains they occur in a series with rice at the lowest and barley at the highest point; in rice the vitamin occurs only in the hull, in barley in both hull and kernel. The finer the flour is bolted, the less the proportion of vitamins in it. Legumes and potatoes are rich in vitamins, but they pass mostly into the water in which they are boiled, so this water should be used in the preparation of the food. Dried and cooked vegetables have no vitamins. Fresh fruit is rich in vitamins, and in the acid fruits they seem to be especially thermostable. It is still undecided whether wine and oil contain vitamins.

60. **Anaphylaxis.**—Kjelgaard remarks that when one has been giving diphtheria antitoxin for thirty years without the slightest by-effects or complications, an injection of antitoxin seems a very harmless intervention. But a recent experience has upset this belief in him. Seven years ago he gave himself a preventive injection after a child had coughed false membranes into his face, and recently he took another injection for the same reason, some of the membrane tissue having got into his eye. The sixth day intensely itching urticaria developed, preventing sleep, and the face, lips and throat swelled, the pulse became imperceptible, and deep breathing was impossible. There were pains in the eye as if an insect had got in the eye. As these symptoms subsided, pains and tenderness developed in joints and tendons, with fleeting contractures. The symptoms gradually wore off in the course of ten or twelve days leaving merely lassitude in the legs. The dose of antitoxin was 4,000 units; it was supposed to be four months old. The patient injected just before himself showed no symptoms from the injection except slight local urticaria.

61. **Duplicate Cases.**—Hamburger describes four pairs of unusual cases which occurred in close sequence, and the experience with the first gave the clue to successful treatment in the twin case, especially with actinomycosis. The patient in this second case seemed to have merely pneumonia except for a tender point on one rib and this swelled a little. The surgeon was rather skeptical when called on to open this small tumor, but this revealed typical actinomycosis.

JOURNALS ABSTRACTED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT, JANUARY-JUNE, 1918

The following journals have been abstracted in the Current Literature Department of THE JOURNAL during the past six months. Any of the foreign journals, except those starred, will be lent by THE JOURNAL to subscribers in the United States and to Fellows of the American Medical Association for a period not exceeding three days. Only one journal may be borrowed at a time. Requests for periodicals should be addressed to the Library of the American Medical Association and six cents in stamps should be enclosed. This covers the average expense of mailing a journal. Domestic journals can be obtained by sending the approximate amount direct to the respective publishers. Thus most of the journals indexed are accessible to the general practitioner, no matter where he may be located.

Acta Scholae medicinalis universitatis imperialis in Kioto. Irregular. 1.50 yen. Tokyo.
American Journal of Anatomy. Bi-m. $7.50. 36th St. and Woodland Ave., Philadelphia.
American Journal of Diseases of Children. M. $3. American Medical Association, 535 N. Dearborn St., Chicago.
American Journal of Insanity. Q. $5. Johns Hopkins Press, Baltimore.
American Journal of the Medical Sciences. M. $5. Lea & Febiger, 706 Sansom St., Philadelphia.
American Journal of Obstetrics and Diseases of Women and Children. M. $5. William Wood & Co., 51 Fifth Ave., New York.
American Journal of Ophthalmology. M. $10. 7 W. Madison St., Chicago.
American Journal of Orthopedic Surgery. M. $4. 126 Massachusetts Ave., Boston.
American Journal of Physiology. M. $5. Johns Hopkins Medical School, Baltimore.
American Journal of Public Health. M. $3. 126 Massachusetts Ave., Boston.
American Journal of Roentgenology. M. $5. 69 E. 59th St., New York.
American Journal of Syphilis. Q. $5. C. V. Mosby Co., St. Louis.
American Review of Tuberculosis. M. $3. 2419 Greenmount Ave., Baltimore.
Anales de la Facultad de medicina, Montevideo. Bi-m. $2. Montevideo.
Anales de la Facultad de medicina, Universidad de Lima. Bi-m. 6 soles. Lima, Peru.
Annales de gynécologie et d'obstétrique. M. 22 francs. Paris.
Annales de médecine. M. 23 francs. Paris.
Annali d'igiene. M. 20 lire. Rome.
Annals of Medical History. Q. $6. Paul B. Hoeber, 67 E. 59th St., New York.
Annals of Surgery. M. $6. J. B. Lippincott Co., 227 S. 6th St., Philadelphia.
Annals of Tropical Medicine and Parasitology. Q. $5. Liverpool.
Archives of Diagnosis. Q. $2. Rebman Co., 141 W. 36th St., New York.
Archives of Internal Medicine. M. $4. American Medical Association, 535 N. Dearborn St., Chicago.
Archives des maladies de l'appareil digestif et de la nutrition. M. 14 francs. Paris.
Archives des maladies du cœur, des vaisseaux et du sang. M. 17 francs. Paris.
Archives médicales belges. M. 18 francs. Paris.
Archives de médecine des enfants. M. 18 francs. Paris.
Archives de médecine et de pharmacie militaires. M. 40 francs. Paris.
Archives mensuelles d'obstétrique et de gynécologie. M. 25 francs. Paris.
Archives of Ophthalmology. Bi-m. $5. G. P. Putnam's Sons, 2 W. 45th St., New York.
Archives of Pediatrics. M. $3. E. B. Treat & Co., 45 E. 17th St., New York.
Archives of Radiology and Electrotherapy. M. $5. London.
Archivos españoles de pediatria. M. 18 pesetas. Madrid.
Boletin de la asociación médica de Puerto Rico. Q. San Juan, Porto Rico.
Bollettino dell'istituto sieroterapico milanese. Milan.
Boston Medical and Surgical Journal. W. $5. 126 Massachusetts Ave., Boston.
Brain. Irregular. $4. London.
Brazil-medico. W. 20 milreis. Rio de Janeiro.
Bristol Medical and Chirurgical Journal. M. 6s. Bristol.
British Journal of Children's Diseases. Q. $5. London.
British Journal of Surgery. Q. $6.50. William Wood & Company, 51 Fifth Ave., New York.
British Journal of Tuberculosis. Q. $1.25. G. E. Stechert & Co., 151 W. 25th St., New York.
British Medical Journal. W. $10. London.
Bulletin de l'Académie de médecine. W. 20 francs. Paris.
Bulletin of the Canadian Army Medical Corps. Ottawa.
Bulletin of the Johns Hopkins Hospital. M. $3. Baltimore.
Bulletin of the Lying in Hospital of the City of New York. Irregular. $1. 23 E. 93d St., New York.
Bulletin of the Naval Medical Association of Japan. Irregular. Tokyo.
Bulletins et mémoires de la Société médicale des Hôpitaux de Paris. W. 28 francs. Paris.
California State Journal of Medicine. M. $1. Butler Bldg., San Francisco.
Canadian Medical Association Journal. M. $5. 386 Victoria St., Toronto.
Chirurgia clinica. M. 45 lire. Milan.
Chirurgia degli organi di movimento. Bi-m. 35 lire. Bologna.
Cleveland Medical Journal. M. $2. 2318 Prospect Ave., Cleveland.
Colorado Medicine. M. $2. Metropolitan Bldg., Denver.
Correspondenz-Blatt für schweizer Aerzte. W. 22 francs. Basel.
Cronica medica. Semi-m. 6 soles. Lima, Peru.
Crónica médico-quirúrgica de la Habana. M. 4 pesos. Havana.
Delaware State Medical Journal. M. $1. Wilmington.
Dublin Journal of Medical Science. M. $5.
Edinburgh Medical Journal. M. $6.
Escuela Médico-Militar. M. $4. Mexico City.
Gaceta médica de Carácas. Semi-m. 16 bolivares. Carácas, Venezuela.
Gaceta médica de México. Irregular. $6. Mexico City.
Gann. Irregular. Tokyo.
Gazzetta degli ospedali e delle cliniche. Semi-w. 25 francs. Milan.
Glasgow Medical Journal. M. $5.
Grèce médicale. Semi-m. 12 francs. Athens.
Hospitalstidende. W. 27.5 kronen. Copenhagen.
Hygiea. M. $5. Stockholm.
Illinois Medical Journal. M. $2. 3338 Ogden Ave., Chicago.
Indian Journal of Medical Research. Q. 10s. Calcutta.
Indian Medical Gazette. M. $5. Calcutta.
Journal of Abnormal Psychology. Bi-m. $4. R. G. Badger, 194 Boylston St., Boston.
Journal of the American Medical Association. W. $5. 535 N. Dearborn St., Chicago.
Journal of the Arkansas Medical Society. M. $1. Boyle Bldg., Little Rock, Ark.
Journal of Bacteriology. Bi-m. $5. Williams & Wilkins Company, Baltimore.
Journal of Biological Chemistry. M. $3. 2419 Greenmount Ave., Baltimore.
Journal of Cancer Research. Q. $5. Williams & Wilkins Company, Baltimore.
Journal de chirurgie. M. 44 francs. Paris.
Journal of Cutaneous Diseases. M. $5. 7 W. Madison St., Chicago.
Journal of Experimental Medicine. M. $5. Rockefeller Institute for Medical Research, 66th St. and Avenue A, New York.
Journal of the Florida Medical Association. M. $1.50. P. O. Box 136, Jacksonville, Fla.
Journal of Immunology. Bi-m. $5. Williams & Wilkins Company, Baltimore.
Journal of the Indiana State Medical Association. M. $2. 406 W. Berry St., Fort Wayne, Ind.
Journal of Infectious Diseases. M. $5. 629 S. Wood St., Chicago.
Journal of Iowa State Medical Society. M. $2. Des Moines.
Journal of Kansas Medical Society. M. $2. 303 Commerce Bldg., Topeka, Kan.
Journal of Laboratory and Clinical Medicine. M. $3. C. V. Mosby Company, St. Louis.
Journal of Laryngology, Rhinology and Otology. M. $5. London.
Journal of Maine Medical Association. M. $2. Portland, Maine.
Journal of Medical Association of Georgia. M. $1. Lamar Bldg., Augusta, Ga.
Journal of Medical Research. Bi-m. $4. 240 Longwood Ave., Boston.
Journal of Medical Society of New Jersey. M. $2. 12 Cone St., Orange, N. J.
Journal de médecine de Bordeaux. M. 15 francs.

W.—Weekly; M.—Monthly; Semi-m.—Semi-monthly; Bi-m.—Bi-monthly; Q.—Quarterly. *Cannot be loaned.

*Journal de médecine de Paris. M. 10 francs. Paris.
Journal of Michigan State Medical Society. M. $3.50. Power's Theatre Bldg., Grand Rapids, Mich.
Journal of Missouri State Medical Association. M. $2. 3517 Pine St., St. Louis.
Journal of Nervous and Mental Diseases. M. $8. 64 W. 56th St., New York.
Journal of Oklahoma State Medical Association. M. $2. Muskogee.
Journal of Parasitology. Q. $2. Urbana, Ill.
Journal of Pathology and Bacteriology. Q. $5.50. Cambridge, England.
Journal of Pharmacology and Experimental Therapeutics. M. $5. 2419 Greenmount Ave., Baltimore.
Journal de radiologie et d'électrologie. M. 28 francs. Paris.
Journal of South Carolina Medical Association. M. $2. Greenville, S. C.
Journal of State Medicine. M. 2 shillings. London.
Journal of Tennessee State Medical Association. M. $2. 601 Cedar St., Nashville, Tenn.
Journal of Tropical Medicine and Hygiene. Semi-m. $5. London.
Journal d'urologie médicale et chirurgicale. M. 42 francs. Paris.
Journal of Urology. Bi-m. $5. Williams & Wilkins Co., Baltimore.
Journal-Lancet. Semi-m. $2. 839 Lumber Exchange, Minneapolis.
Kentucky Medical Journal. M. $2. State and Twelfth Sts., Bowling Green, Ky.
Kitasato Archives of Experimental Medicine. Twice a year. 60 cents. Tokyo.
Lancet. W. $10. London.
Laryngoscope. M. $5. 3858 Westminster Place, St. Louis.
Lyon chirurgical. M. 25 francs.
Lyon médical. M. 15 francs.
Mededeelingen van den Burgerlijken Geneeskundigen Dienst in Nederlandsch-Indië. Irregular. Price varies. Batavia, Java.
Medical Journal of Australia. W. 6 d. Sydney.
Medical Record. W. $5. W. Wood & Co., 51 Fifth Ave., New York.
Medicina Ibera. W. 25 pesetas. Madrid.
Medicine and Surgery. M. $4. Medicine and Surgery Publishing Co., Metropolitan Bldg., St. Louis.
Mental Hygiene. Q. $2. National Committee for Mental Hygiene, 50 Union Square, New York City.
Military Surgeon. M. $3.50. Army Medical Museum, Washington, D. C.
Minnesota Medicine. M. $2. Lowry Bldg., St. Paul.
Mitteilungen aus der medizinischen Fakultät der Kaiserlichen Universität Kyushu. Irregular. Price varies. Fukuoka.
Mitteilungen aus der medizinischen Fakultät der Kaiserlichen Universität zu Tokyo. Irregular. Price varies. Tokio.
Modern Hospital. M. $3. Metropolitan Bldg., St. Louis.
National Medical Journal of China. $2. Shanghai.
Nebraska State Medical Journal. M. $2.00. 468 Brandeis Bldg., Omaha.
Nederlandsch Tijdschrift voor Geneeskunde. W. 10.50 florins. Amsterdam.
Neurological Bulletin. M. $3. 69 E. 59th St., New York.
New Mexico Medical Journal. M. $2. P. O. 23, Las Cruces, N. M.
New Orleans Medical and Surgical Journal. M. $2. 1551 Canal St., New Orleans.
New York Medical Journal. W. $5. A. R. Elliott Publishing Co., 66 W. Broadway, New York.
New York State Journal of Medicine. M. $1. 17 W. 43d St., New York.
Norsk Magazin for Lægevidenskaben. M. $5. Christiania.
Northwest Medicine. M. $2. Cobb Bldg., Seattle, Wash.
Nourrisson. Bi-m. 14 francs. Paris.
Ohio State Medical Journal. M. $2. Physician's Bldg., Columbus.
Paris médical. W. 16 francs.
Pediatria. M. 20 lire. Naples.
Pennsylvania Medical Journal. M. $2. Athens, Pa.
Philippine Journal of Science. Irregular. $3. Manila, P. I.
Policlinico. W. 32 lire. Rome.
Practitioner. M. $6.50. London.
Prensa médica argentina. Semi-m. 25 francs. Buenos Aires.
Presse médicale. Semi-w. 15 francs. Paris.
Progrès médical. W. 12 francs. Paris.
Psychiatric Bulletin. Q. $2. New York State Hospital Commission, Albany.
Public Health Journal. M. $2. York Publishing Co., 169 Bay St., Toronto.
Quarterly Journal of Medicine. $6.50. London.
Repertorio de medicina y cirugía. M. $3. Bogotá, Colombia.
Revista clinica. Q. $1. Medellin.
Revista de la Asociación médica argentina. M. Buenos Aires.
Revista de medicina y cirugia de la Habana. Semi-m. $4.50. Havana.
Revista de medicina y cirugia prácticas. W. 30 pesetas. Madrid.
Revista dos Cursos. Irregular. Porto Alegre.
Revista médica cubana. M. Havana.
Revista médica de Yucatán. M. 6 pesos. Mérida, Mexico.
Revista médica del Rosario. Bi-m. 10 pesos. Rosario, Argentina.
Revista médica del Uruguay. M. 30 francs. Montevideo.
Revista medico-cirurgica do Brazil. M. 10 milreis. Rio de Janeiro.
Revista sud-americana de endocrinologia, immunologia y quimioterapia. M. $5. Buenos Aires.
Revue de chirurgie. M. 33 francs. Paris.
*Revue de médecine. M. 23 francs. Paris.
Revue médicale de la Suisse romande. M. 14 francs. Geneva.
Rhode Island Medical Journal. M. $2. Providence.
Riforma medica. W. 35.50 lire. Naples.
Rivista critica di clinica medica. W. 16 lire. Florence.
Rivista di clinica pediatrica. M. 18 lire. Florence.
Russkiy Vrach. W. 13 rubles. Petrograd.
Schweizer Archives für Neurologie und Psychiatrie. Irregular. Price varies. Zurich.
Sei-I-Kwai Medical Journal. M. $2. Tokio.
Semana médica. W. $5. Buenos Aires.
Siglo médica. W. 20 pesetas. Madrid.
Social Hygiene. Q. $2. 2419 Greenmount Ave., Baltimore.
Southern Medical Journal. M. $3. 807 Empire Bldg., Birmingham, Ala.
Southwest Journal of Medicine and Surgery. M. $1. El Reno, Okla.
Southwestern Medicine. M. $2. El Paso, Texas.
Surgery, Gynecology and Obstetrics with International Abstract of Surgery. M. $10. Surgical Publishing Co., 30 N. Michigan Ave., Chicago.
Svenska Läkaresällskapets Handlingar. Q. 7.50 kroner. Stockholm.
Texas State Journal of Medicine. M. $2.50. Western National Bank Bldg., Fort Worth, Tex.
Tumori. Bi-m. 25 lire. Rome.
Ugeskrift for Læger. W. 20 kroner. Copenhagen.
United States Naval Medical Bulletin. Q. $1. Washington, D. C.
Upsala Läkareförenings Förhandlingar. Irregular. 10 kroner.
Vermont Medicine. M. $1. Rutland, Vt.
Vida nueva. M. 3 pesos. Havana.
Washington Medical Annals. Bi-m. $1. 2114 18th St., N. W., Washington, D. C.
West Virginia Medical Journal. M. $1.50. Huntington, W. Va.
Wisconsin Medical Journal. M. $2. Goldsmith Bldg., Milwaukee.

W.—Weekly; M.—Monthly; Semi-m.—Semi-monthly; Bi-m.—Bi-monthly; Q.—Quarterly. *Cannot be loaned.

SUBJECT INDEX

This is an index to all the reading matter in THE JOURNAL. In the Current Medical Literature Department only the articles which have been abstracted are indexed.

The letters used to explain in which department the matter indexed appears are as follows: "E," Editorial; "C," Correspondence; "T," Therapeutics; "Ml," Medicolegal; "P," Propaganda for Reform; "ME," Medical Economics; "ab," abstract; the star (*) indicates an "Original Article" in THE JOURNAL.

This is a subject index and one should, therefore, look for the subject word, with the following exceptions: "Book Notices," "Deaths" and "Society Proceedings" are indexed under these titles at the end of the letters "B," "D" and "S." Matter pertaining to the Association is indexed under "American Medical Association."

The name of the author follows the subject entry in brackets. The figures in parentheses refer to the paragraph in the Current Medical Literature Department, the number following to the page in THE JOURNAL.

For author index see page 2093.

A

- ABBOTT Bros. Rheumatic Remedy misbranded, 1624—P
  - Mixed Vaccines not admitted to N. N. R., 1967—P
- ABBREVIATIONS, method of writing, 721
- ABDERHALDEN REACTION: See also under names of various diseases
- ABDERHALDEN REACTION, [Amann] (78) 134, 692—E
  - present status of, [Abderhalden] (51) 638
- ABDOMEN, acute surgical conditions, heart infarction simulating, [Levine & Tranter] (7) 267
  - big, in soldiers, [Pisani] (73) 201, [Ceconi] (76) 1341
  - big, surgical treatment by new three flap operation, [MacLean] 414—ab
  - glioma of upper region of, [Thompson] 266—ab
  - in infants, [Gismondi] (60) 659
  - injury in newly born, [Hedren] (95) 1988
  - new incision for exposure of lower abdomen and pelvis, [Churchman] (22) 956
  - Ptosis of: See Splanchnoptosis
  - rubber envelop abdominal pad, [Bissell] *677
  - surgery at advanced post, [Drouin] (63) 816
  - surgery, exploratory, modification of universal incision in, [Del Valle] (138) 58
  - wounds, [Stoppato] (70) 659, [Carrera & Cano] (83) 660
  - wounds at casualty clearing station, [Charles] (2) 1335
  - wounds, penetrating, 111
  - wounds, stretcher for carrying those with, [Blondel] (43) 131
  - wounds, surgery for, [Moreno] (82) 740
- ABORTION cases, allowed use of hospital history as evidence in, 340—Ml
  - conservative treatment of, [Mosher] 1889—ab
  - criminal, repression of, [Bar] (42) 1572
  - due to superfetation, [Gustetter] *20
  - liability for damages from criminal operation, 483—Ml
  - septic, treatment of, [Ries] (109) 1191
  - teratogenous influence of attempts at, [Wilbouchewitch] (61) 577
  - treatment of, [Gammeltoft] (107) 580
- ABSCESSES: See also under names of organs and regions
- ABSCESSES, approval of claim for treating abscess after 30 days from accident, 876—Ml
  - peritonsillar, [Bilancioni] (37) 2058
- ACCIDENT, acute nephritis and other diseases as injuries by, 879—Ml
  - approval of claim for treating abscess after 30 days from, 878—Ml
- ACCOUNT, itemizing of, and application of payments, 1884—Ml
- ACETONE and acetic acid from beets, 928—ab
  - bodies, urinary, and ammonia excretion in diabetes mellitus, [Richards] (91) 1894
- ACHLORHYDRIA without cancer, [Ramond & others] (41) 198
- ACID, acetic, and acetone from beets, 928—ab
  - Acetylsalicylic: See also Aspirin
  - acetylsalicylic, 645
  - acetylsalicylic, Merck, 459
  - acetylsalicylic, or "What's in a name?" 1097—E
  - amino, in urine from debilitated infants, [Cannata] (44) 1126
  - fatty, in human blood in normal and pathologic conditions, [Csonka] (40) 1188
  - hippuric, formation, and liver, 1464—E
  - hydrochloric, in gastric juice, iodometric estimation of, [Scheltema] (111) 135
  - Intoxication: See Acidosis
  - lactic acid cultures in difficult feeding cases, [Bogert] (91) 489
  - lactic, effect on respiratory center, [Cohen] (41) 1892
  - Salicylic: See also Salicylates
  - salicylic, is it excreted as salicyluric acid? 1769—E
  - salicyluric, in salycil urines, [Hanzlik] (87) 194
  - uric, theory, 1368—ab
- ACIDEMIA in gas gangrene and in conditions which favor growth of its infective agent in blood fluids, [Wright & Fleming] (18) 889
- ACIDOSIS and nitrogen metabolism after transplantation of ureter into duodenum in dogs, [Goto] (31) 1259
  - in diphtheria, [Peters] (7) 490
  - in shock, [McEllroy] *846
  - in shock, hemorrhage and gas infection, [Cannon] *531
  - measure of, 1004—E
  - method of detecting acidosis and determining hydrogen ion concentration of cerebrospinal fluid, [McClenndon] *977
  - of nephritis, cause of death in, [Whitney] (23) 125
  - varying susceptibility of children to, [Sawyer & others] (1) 267
- ACORNS and chestnuts as sources of carbohydrate, 1158—ab
- ACRIFLAVINE, action of, [Morgan] (33) 961
  - and proflavine, in infected gunshot wounds, [Carslaw & Templeton] (45) 1895
- ACROPARESTHESIA from chilling, [Cottet] (43) 1982
- ADAMS-STOKES DISEASE: See Heart-Block
- ADDISON'S DISEASE plus exophthalmic goiter, [Ramond & François] (56) 815
- ADENECTOMY and tonsillectomy, [Iddings] (42) 1390
- ADENOIDS with pituitary feminism, [Citelli & Caliceti] (72) 1508
- ADENOMA, prostatic, instructive case with vesical calculus concealed by sessile pedunculated median lobe, [Lydston] *1297
- ADRENALIN: See Epinephrin
- ADRENALS: See Suprarenals
- ADULTERATION, scientific, 995—ab
  - with saccharin, 1972—Ml
- ADVERTISING, medical, 719—P
  - principles, lay and medical, 1558—P
- AGGLUTINATION after army triple typhoid vaccination, [Fennel] *1915
  - in blood, [Fahræus] (101) 1900
  - method of diagnosis in triple inoculated individuals, [Perry] (35) 1895
  - of human red blood corpuscles by horse serum, [Williams & Patterson] *1754
- AHLFELD method for determining maturity of fetus in utero, modification of, [Thoms] (117) 1636
- AIR, atmospheric, in upper digestive tract, [Kantor] (11) 2053
  - raid shelters and infection, 1181
  - raids and American Red Cross, 1247
  - raids, medical aid in, 1248
  - rarefied, influence of, on intelligence, [Lopez] (85) 579
- ALABAMA medical news, 861, 939, 1242, 1479
- ALASKA July examination, 482
- ALBUMIN, acetic-sulphuric acid test for, [Leone] (70) 1340
  - and globulin ratio in antitoxic immunity, [Meyer & others] (74) 193, (38) 486
- ALBUMINURIA after acute nephritis, [Péhu & Daguet] (34) 815
  - in schoolchildren, [Hamelberg] (108) 1577
  - orthostatic, [Scheel] (112) 1510
  - with jaundice, [Höjer] (103) 580
- ALBUMOSURIA, multiple osteomyeloma with, [Martiri] (81) 495
  - of pregnancy, [Tanberg] (110) 742
- ALCOHOL and sterility, 168—E
  - and work, [Lusk] 1628—ab
  - benzyl, as local anesthetic, use of, [Macht] 1790—ab, (44) 1892
  - filling of prescriptions containing, 410
  - for what physician may and may not keep intoxicating liquors, 340—Ml
  - in trigeminal neuralgia, [Sicard] (64) 61
  - intoxication, effect of, on catalase, [Burge] (7) 124
  - none in hospital fare, [Jona] (40) 275
  - passage of, into cerebrospinal fluid, [Lenoble & Daniel] (33) 421
  - provision of permit and bond for using and dispensing, 186, 645
  - question in Chile, 1962
  - reclamation of used, [Lamb] 49—C
  - sterilization, [Christiansen] (132) 1046
  - suppression of, in histologic technic, [Couturier] (48) 131
  - Wood: See Methyl Alcohol
- ALCOHOLISM and mental diseases, 1962
  - suppression of, 1248
- ALDEHYD in foods, test for, [Pittarelli & Pittarelli] (41) 350
- ALIMENTARY TRACT: See Gastro-intestinal Tract
- ALKALOIDS, tungstates of, experimental pharmacologic study, [Fantus] (46) 56
- ALLEMAND, César, death of, 714
- ALLERGY: See Anaphylaxis; Immunity
- ALOPECIA, syphilitic, complete, case of, [Kindley] *86
- ALORINE Antiseptic Suppository misbranded, 1183—P
- ALPHA KAPPA KAPPA Medical Fraternity, meeting of, 183
- AMAUROSIS, tabetic, [Espejo] (53) 351
- AMBARD'S constant in diagnosis, [Aranha] (69) 1985
- AMBULANCE, college of, 1482
  - section, American, No. 5, decoration of, 111
  - train, latest, 1876
- AMEBA carriers, chronic enteritis in, [Mouriquand & Deglos] (30) 273
  - cysts, detection of, in stools, technic for, [Carles & Barthélemy] (31) 273
- AMEBIASIS: See Dysentery, Amebic
- AMENORRHEA, war, 450—ab
- AMERICAN aid through Red Cross, Henry P. Davison on, 1321
  - Association of Anesthetists, meeting of, 1782
  - Child Welfare Congress meeting, 943
  - Climatological and Clinical Association, meeting of, 1553
  - donations, exposition of, in Paris, 111
  - ideals, [Anderson] 1939
  - Journal of Ophthalmology, 392—E
- AMERICAN MEDICAL ASSOCIATION, a military survey, 1378—E
  - address by Major Rist, 1854
  - alumni and section dinners, 796
  - amendment to by-laws, 1855
  - auditors' report, 1839
  - British delegates to annual session of, 1770
  - call to, [Gorgas] 1100
  - Chicago session, 796, 1867—E
  - Chicago session, program of meetings, 1770
  - Chicago session, retrospect of, 1945—E
  - clinics at Chicago session, 796, 1248, 1419, 1607
  - commercial exhibit, educational value of, 1431
  - committee on cooperation with National Education Association, 1843
  - constituent organizations of, letter to, [Work] 1324—C
  - corporate rights of, 1233—E, 1327—Ml
  - Council on Medical Education, conference of, 44
  - Council on Medical Education, problems and policy, [Arnold] 484—ab
  - date of organization, 1116
  - discussion on selective service regulations and standards of physical examination at Chicago session, 1606
  - election of officers, 1940
  - entertainment for visiting medical officers, 1464
  - entertainment for women guests, 1541, 1770
  - general meetings, 1606
  - guests at annual session, 1606
  - hotel headquarters for Chicago session, 715, 946, 1417
  - House of Delegates, meeting of, 1541, 1831, 1940
  - House of Delegates, members of, 1407
  - important special meetings at Chicago session, 1541
  - in answer to Surgeon-General's appeal for 5,000 additional Medical Reserve Corps Officers, 1165
  - Journal, "Brevity is soul of wit," [Haupt] 1254—C
  - Journal, Chicago number, 1464—E
  - Journal may be late, 234—E
  - medical features of convention city, 1408
  - medical military meeting, 1932
  - meetings for women physicians, 1420
  - military medical headquarters at Chicago, 1770
  - official call to officers, fellows and members of, 1407
  - patriotic meeting, 1939
  - place of next annual session, 1940
  - president-elect, Major Alexander Lambert, 1948—E
  - president's address, [Mayo] 1853
  - reconstruction and rehabilitation of disabled soldiers, report of meeting of section on miscellaneous topics, 1924, 2012
  - reference committees, 1831
  - registration of, 1419, 1943

AMERICAN MEDICAL ASSOCIATION, report of Board of Trustees, 1834, 1838
report of Committee on Credentials, 1854, 1855
report of Committee on Reappointment, 1942
report of Committee on Women's and Children's Welfare, 1843
report of Council on Health and Public Instruction, 1842
report of Council on Medical Education, 1844
report of Council on Scientific Assembly, 1851
report of Judicial Council, 1840
report of Reference Committee on Amendments to Constitution and By-Laws, 1856, 1941
report of Reference Committee on Hygiene and Public Health, 1857, 1941
report of Reference Committee on Legislation and Political Action, 1858, 1941
report of Reference Committee on Medical Education, 1855
report of Reference Committee on Miscellaneous Business, 1859
report of Reference Committee on Reports of Officers, 1855, 1858, 1942
report of Reference Committee on Sections and Section Work, 1941
report of Secretary, 1832
report of Subcommittees of Council on Health and Public Instruction, 1843
report of War Committee of, 1852
report on Red Cross medical work, 1855
resolution for Ad-Interim Committee, 1854
resolution for revision of patent laws, 1855
resolution on animal experimentation, 1855
resolution on health of civilian communities, 1855
resolution on rank for women physicians, 1855
resolution on rehabilitation and reeducation of disabled soldiers, 1855
resolution on use of drugs, 1855
response to call for medical officers, 1301—E
scientific assembly, opening general meeting, 1860
scientific assembly, preliminary program of, 1421
scientific exhibit, 1022, 1421, 1948—E
scientific exhibit, advisory committee on, 405, 640
scientific exhibit, awards in, 1943
section meeting places, 868
section on diseases of children, 2019
section on laryngology, otology and rhinology, 2018
section on obstetrics, gynecology and abdominal surgery, 2016
section on ophthalmology, 2017
section on pharmacology and therapeutics, 2020
section on practice of medicine, 2015
section on surgery, general and abdominal, 2015
section to consider reeducation of disabled soldiers, 868, 1541
Treasurer's report, 1839
war conference of secretaries of constituent state associations of, 1302, 1378, 1464
war service of, [Gorgas] 697
war session of, in Chicago, 1461—E
AMERICAN Medical Golfing Association, 1420
Pediatric Society, officers of, 1782
Poets' Ophthalmic Ambulance, 1875
Posture League, annual meeting of, 795
Proctologic Society meeting indefinitely postponed, 1390
Public Health Association meeting, 1179, 1553
Red Cross: See Red Cross, American
Society for Control of Cancer, work of 1917, 332
surgery in 1917, [Finochietto] (96) 1900
AMERICANS, honors conferred on, 1022
AMINO-ACIDURIA, association of, with Bence-Jones proteinuria, [Simon] *224
AMMONIA excretion and urinary acetone bodies in diabetes mellitus, [Richards] (91) 1894
AMMONOL and Phenalgin, 337—P
AMPUTATION cases, Canadian, 1019
functional value of stumps, [Amar] (78) 1899
spur-like formations of bone following, [Morgan] (56) 1120
stumps, infected, intermittent reunion for, [Chaput] (42) 1039
vitalization of artificial limbs, kineplasty, [Putti] (40) 1126, [Vanghetti] (53) 1984
AMYL nitrite inhalations in diagnosis of mitral stenosis, [Morison] (7) 1795
AMYOTROPHY, reflex, [Cano] (105) 1045
ANAEROBES, separating points in technic of, [Stoddard] *906
ANALGESIA: See Anesthesia
ANAMNESIS in cardiovascular disease, [Brady] *1449
ANAPHYLATOXIN and anaphylaxis, [Novy & De Kruif] (79) 1509
ANAPHYLAXIS: See also Immunity
ANAPHYLAXIS and anaphylatoxin, [Novy & De Kruif] (79) 1509
and respiratory and circulatory systems in relation to cause of death, [Petz & Jackson] (52) 1568
case of, [Kjelgaard] (60) 2060
phenomena following intraportal injections, [Falls] (83) 193
theory of anaphylactic shock, [Kritchewsky] (32) 570
with skin diseases, [Lutz] (35) 274
ANATOMY, plea for rational system of instruction in, [Mayer] 873—C
ANDERSON, Elizabeth Garrett, 333
ANDREWS' Wine of Life Root Annex Powders, 1184—P
Wine of Life Root or Female Regulator, 1184—P
ANEMIA, blood transfusion in, [Ravaut & de Kerdrel] (39) 891
blood volume in, new method for estimating total, [Lindeman] *1209, *1292
experimental, blood fat and lipoids of dog before and after production of, [Dubin] (34) 1188
experimental, elimination of iron and its distribution in liver and spleen in, [Dubin & Pearce] (34) 1259
experimental mitochondria in red blood corpuscles during, [Sappington] (28) 1891
experimental, viscosity of blood with, [Saneyoshi] (59) 277
hemolysis with, signs of, [Hannema] (95) 425
pernicious, hemosiderin granules in cells of urine an aid to diagnosis of hemochromatosis and, [Rous] 1887—ab
pernicious, plus lymphadenosis, [Frattini] (75) 1575
pernicious, results of treatment in, [Bloomfield] (20) 1633
pernicious, total blood volume in, [Lindeman] *1209, *1292
splenic, [Morris & others] (10) 191
splenic, pathologic study of, [Hartman] (142) 271
ANENCEPHALY, family prevalence in, [Thoms] *10
ANESTHESIA, chloroform, ether and nitrous oxid oxygen, in pregnancy and labor, [Davis] (88) 571
ether, care of eyes of patient during, [Miller] *83
ether-oil, by rectum, [Kholtzoff] (64) 277
general analgesia by oral administration, [Gwathmey & Karsner] *993
intratracheal anesthetic machine, [Adson & Little] *1746
local anesthetics, comparative absorbability of, from urethra, [Sollmann] (52) 1261
local anesthetics, comparative efficiency of, [Sollmann] *216, (85-87) 887
local anesthetics, reporting accidents from, [Sollmann & Hatcher] 158—C
local, benzyl alcohol as, [Macht] 1790—ab, (44) 1892
mechanism of action of anesthetics, [Burge & others] (11) 1332
morphin and ether, blood dextrose as affected by, [Ross] (49) 1978
spinal, [Meuriot & Platon] (55) 576
spinal, by lumbosacral cocainization, [Delmas] (30) 1402
spinal, experiences with, [Blanc y Fortacin] (107) 1803
ANEURYSM, abdominal aortic, with rupture into duodenum, [Marlow & Doubler] (5) 1498
aortic, findings in, with erosion of vertebrae; globules of metallic mercury in tissues, [Kolmer & Mastin] *1290
aortic, low diastolic and high pulse pressure in 3 cases of, [Stewart] (50) 2055
aortic, serial frozen sections of thorax from case of, [Fetterolf & Norris] (26) 416
arteriovenous, in war surgery, [Forgue] (63) 893
carotid, unilateral ophthalmoplegia due to, [Viets] (61) 1569
femoral, double, proximal occlusion with autoplastic fascial flap in, [Jones & Waites] (139) 58
nonoperative reduction of, [Castellano] (78) 1575
ANGINA, coronary thrombosis in relation to, [Herrick] 1030—ab
pectoris, [Calleja] (92) 497, [Ingals & Meeker] *969
pectoris, Clifford Allbutt's views of cause of, [Babcock] 1031—ab
pectoris, clinical experience with 200 cases, [Herrick & Nuzum] *67
pectoris, pathology of, [LeCount] *974
Vincent's: See Vincent's Angina
ANGIOMA, plexiform, and cavernous, treatment of, [Reder] 1889—ab
ANKLE reflex, paradoxic, as sign of organic disease, [Bing] (64) 1640
wounds of foot and, in war, [Quénu] (74) 133
ANKYLOSTOMIASIS: See Uncinariasis
ANONYCHIA, partial hereditary, [Charteris] (30) 1895
ANOSCOPE, self-retaining, [Pennington] *154
ANTHELMINTIC medication, [Hall] (123) 654
value of components of oil of chenopodium, [Hall & Hamilton] (43) 1892
ANTHRAX, 952
B. anthracis septicemia, with recovery, [Graham & Detweiler] *671
successful treatment of, [Dudley] *15
ANTHROPOLOGY, British, problems in, [Keith] 1020
permanent department of, 1964
ANTIBODIES, circulating, relation of, to serum disease, [Longcope & Rackemann] (66) 1036
extracts of, obtained from specific precipitates of typhoid antityphoid serum, [Weinstein] (46) 731
production and antigen dose, quantitative relationship between, [Tsen] (54) 810
production, effects of roentgen ray on, [Hektoen] (75) 193, (39) 486
production, influence of arsphenamin and mercury on, [Kolmer & Toyama] 1496—ab
ANTIGENS, bacterial, method of preparing, [Small] 1497-ab
dose and antibody production, quantitative relationship between, [Tsen] (54) 810
precipitin, production of, from bacteria, [Krumwiede & Noble] (44) 731
ANTIPHLOGISTINE, [Gould] 557-P
ANTIPNEUMOCOCCUS serum, 1599, 1923
serum, potency of, [Wayson & McCoy] *1747
ANTIPOLLEN serum for standardization of pollen antigen, [Clock] (46) 486
ANTISEPTICS, action of, on toxin of bacillus aerogenes capsulatus, [Taylor & Austin] (68) 1036
modern, [Gould] (4) 59
nontoxic, [Mencière] (54) 893
properties of certain organic compounds, [Kligler] (33) 1259
reagents, hemagglutinin reaction as test of toxicity of, [Bond] (2) 959
solvent action of, on necrotic tissue, [Taylor & Austin] (54) 268
toxicity of widely used, [Taylor & Austin] (70) 1794
ANTITETANUS Serum: See Tetanus
ANTITOXIN, Diphtheria: See Diphtheria Antitoxin
ANTITOXIN, production of, [Kraus & Sordelli] (77) 1406
Tetanus: See Tetanus Antitoxin
ANTITRYPSIN, clinical test of action of, and diagnostic value in cancer, [Kurata] (3) 347
ANTIVENOM serums, specific precipitating properties of, [Houssay & Negrete] (96) 819
ANTIVIVISECTIONISTS and barb wire entanglements, 168—E
another challenge to, 1948—E
misrepresentation exposed, [Keen] 1542
newspapers on Red Cross and, 238—E
ANTWERP physicians penalized by Germans, 1245
ANUS, fistula of, [Edwards] (13) 2056
fistula of, divulsion in treatment of, [Masci] (82) 1899
fistula of, medical cure of, [Peter] (122) 1271
ANUSOL Suppositories, 719—P
AORTA, abdominal, aneurysm of, with rupture into duodenum, [Marlow & Doubler] (5) 1498
abdominal, experiments outlining limitations of operations on, [Goodman] (65) 1794
aneurysm of, serial frozen sections of thorax from case of, [Fetterolf & Norris] (26) 416
aneurysm of, with erosion of vertebrae, [Kolmer & Mastin] *1290
fragment of bullet on descending, extracted through posterior mediastinum, 44
projectile resting on, extraction of, from rear, [Laurent] (35) 198
AORTITIS, abdominal, graphic sign of, [Mougeot] (49) 1573
APHASIA during typhoid, left-handedness cured following, [Thomas] 481—C
APOMORPHIN and morphin, absorption of, from bladder and urethra, [Macht] (62) 1189, 1232—E
APONEUROSIS, grafted, [Greggio] (52) 575
APOPLEXY: See Brain, Hemorrhage
APPARATUS: See also Instrument
APPARATUS, artificial respirator, [Dudley] *21
combination Finochietto and Steinmann pin traction stirrup, [Hawley] *22
for collecting urine from male infants, [Schloss] *223
for holding foot in flexion and inversion, [Vietor] *678
intratracheal anesthetic machine, [Adson & Little] *1746
siphonage device for chest aspirations, [Felsen] *156
straddle stand for prophylaxis and treatment of sexual infections in army, [Clark] *90
APPEAL board, medical problems connected with draft from standpoint of, [Harris] 806—ab
APPENDECTOMY, prophylactic, through hernial sac, [Norrlin] (104) 498
APPENDICITIS, deceptive cures of, [Diddens] (88) 353
etiology of, [Baird & Baird] 1330—ab
in childhood, [Porter] (48) 345
in gassed, [Moutier] (28) 1505
APPENDIX, distribution of fat in, and relation to inflammation, [Smith] (26) 956
malposition of, unusual case of, [Miller] *23
palpation of, [Hagen Torn] (100) 135
tuberculosis of, [Scott] (45) 192
ARGENTINA, bibliographic index of medical works in, 1321
letter, 1246
Medical Association organizes an honor court, 1962
ARGYROL stains, removal of, 721
ARKANSAS eclectic November examination, 951
medical news, 329, 711, 861, 939, 1242
state board November examination, 187
ARM: See also Extremities
ARM, artificial, vitalization of, [Pellegrini] (39) 350
cicatricial binding of, to chest, [de Magalhães] (73) 740
wound of upper, lesions of radical nerve after, [Ruggi] (35) 350
ARMY: See also Draft; Recruits; Soldiers
ARMY appropriations, new, 1771
cardiovascular examinations at base hospital, Camp Hancock, analysis of, [Smith] *911

ARMY, cardiovascular examinations, classification of abnormalities with reference to rejection, acceptance or special service of recruits [Butler] *884
  Council, refusal of direct representation of Medical Corps on, 714
  English medical service of, 795
  examination of regiment, for nervous and mental diseases, [Bowman] (2) 1977
  eyes of, [Greenwood] *2002
  food of, 1864—E
  French, Medical Department of, work at front, 1180
  hamstringing the army, 29—E
  Medical Advisory Board, smaller, 1391
  Medical Corps: See Medical Reserve Corps
  Medical Department of: See Medical Department of Army
  nurse corps, 1006
  nurse corps, modified regulations for, 98
  physical examination in, revision of regulations for, 169
  Regular Medical Corps of, openings in, 1604—E
  retirements in Navy and, coming, 232
  School of Nursing to be established, 1949
  Surgeon-General Gorgas and responsibility of medical department of, 1460—E
  uniforms, relation of dress to health, with reference to, [James] (58) 1400
  urologists, conference of, (60) 1506
ARRHYTHMIA, extrasystolic, experimental research on origin of, [Pletnew] (26) 197
  paroxysmal, complete, recent research on, [Carpentier] (29) 197
  prognosis in cardiac affections as related to murmurs and, [Babcock] *355
ARROW poison from Brazil, [Santesson] (118) 136
ARSENIC, permeability of meninges to, in paresis and tabes, [Barbat] *147
  poisoning, chronic, [Zayas] (104) 1270, [Sicard & Roger] (32) 1798
  [illegible] stological
  [illegible] 779
  [illegible] Goubeau]
[illegible]
  administration of, necessity for care in, 1867—E
  American-made salvarsan, toxicity of, [Sargent] *908
  apparatus, simple, [Wade] *378
  in puerperal blood stream infection, [Miller & Chalfant] 1975—ab
  in syphilis of nervous system, intravenous use of, [Sachs] 1790—ab
  influence of mercury and, on antibody production, [Kolmer & Toyama] 1496—ab
  intraspinal auto-arsphenamized serum therapy of cerebrospinal syphilis, [Thomas] 1329—ab
  investigation in Germany, 1783
  reactions, [Warren] 1562—C
  report on arsenobenzol brand in 1104 injections for syphilis, [Meddis & Stirling] *1458
  toxicity of, report of cases, [Willis] 1254—C
  unduly toxic, examination by Hygienic Laboratory, 1110
  unfavorable reports on, [Farbwerke-Hoechst Co. & Sargent] 1628—C
ARSPHENAMINIZED mercurialized serum, subdural injections of, [illegible] and cord, [illegible] 888
  [illegible] erebral and cardiac types of, [Coffen] (98) 489
ARTERY, coronary, thrombosis of, [Herrick] 1887—ab
  fascia transplantation into lateral defects of major arteries, [Neuhof] (121) 959
  hypogastric, and branches, composite study of, [Lipshutz] (19) 1890
  obliteration of, and nervous ischemia in wounded, [Desplats & Buquet] (58) 1866
  renal, spontaneous rupture of, [Lincoln] *80
  rupture of deep epigastric, by muscular strain, [Emerson] *1145
ARTERY, subclavian, wound of, [Métivet] (64) 132
  surgery of, [Ipsen] (127) 1643
  wounds of arteries of legs in war, [Mocquot & Fey] (69) 133
ARTHRITIS: See also Gout; Joint Diseases; Rheumatism
ARTHRITIS, acute, intravenous injections of foreign protein in, [Cecil] (24) 125
  chronic, in swine, [Sekiguchi & Irons] (69) 127
ARTHROPLASTY, new joint formation in, [Phemister & Miller] (110) 1191
ARTHROTOMY of knee after war wounds, technic for, [Mosti] (11) 275
  treatment of loose bodies in knee joint by, 405
  unilateral, with primary total suture of wounds of knee joint, 1248
ARTICHOKES as food, 909—ab
ASCARIDES, [Ribon] (92) 135
  infection with roundworm ascaris, 460—E
ASCATO misbranded, 1183—P
ASCITES, surgical treatment of, [Toussaint] (59) 351
  tuberculosis, [Gelpke] (69) 964
  with cirrhosis of liver, [Simon] (96) 662
ASEPTINOL, 949—P
"ASETAKE," poisonous action of, [Muto] (51) 1261
ASPHYXIA, appearance of lungs after death from, [Litchfield] (20) 574
  from forensic standpoint, [de Castro] (112) 1015
  Gas: See Gas Asphyxia
  neonatorum, artificial respiration in, [Heald] *1063
ASPIRIN: See also Acid, Acetylsalicylic
ASPIRIN (Bayer) advertising, 1558—P
  Bayer, profit in, [Harris] 2047—C
  incompatibility of quinin and, 481
ASSOCIATION of American Medical Colleges, annual meeting of, 110
  of American Physicians, meeting of, 1482
ASTHENIA from overexertion at front, [Cheyrou] (33) 349
  neurocirculatory, management of, [Lewis] (70) 1569
ASTHMA and constitutional hypersusceptibility, [de Besche] (113) 1804
  and hay-fever, modern views of, 1765—E
  bronchial, clinical study of 150 cases of, [Rackemann] (22) 2054
  bronchial, vaccine therapy of, [Hutcheson & Budd] (10) 2053
  inspirator in treatment of, [Elias] (122) 1199
  intratracheal treatment of, [De Levie] (95) 1130
  metabolism of, [Zugsmith & Kahn] (15) 1398
ASYLUMS, foundling, [Villapadierna] (122) 1642
ATAXIA, hereditary, [Henrichs] (132) 1200
  Locomotor: See Tabes Dorsalis
ATHENS, medical society organized at, 1962
ATHLOPHOROS misbranded, 1624—P
ATONY, gastric dilatation from, [Timbal] (27) 1505
ATROPHY, muscular, following nerve section, cause of, [Stevens] *835
ATROPIN, antagonistic action of physostigmin and, [den Besten & Sluyters] (111) 66
  for hypertonic infant, [Haas] (2) 1566
  in sinus bradycardia, [de Haas] (127) 1046
  test in diagnosis of typhoid, [Mason] (19) 343, [Friedlander & [illegible]
[illegible]: See Heart
  [illegible]onary apices in young men, [King] (68) 487
AUTO-AGGLUTINATION in human serum, [Clough & Richter] (24) 1333
[illegible] exper-
  [illegible] repeated
  [illegible] [Robert-
[illegible] e Serotherapy
AUTOVACCINES, sensitized, [Bazy & Cuvillier] (75) 1898
AVERY'S cultural method, pneumococcus type determination by, [Vaughan] *431, [Beckler & others] *836
AVIATION accidents, medical aspects of, [Anderson] (9) 572
  and tobacco, [Tracy] 1325—C
  Bárány chair tests and flying ability, 1096—E, [Lewis & others] 1559—C, [Parsons & Segar] 1879—C
  Bárány chair tests and flying ability, correlation study of 100 naval aviators, [Parsons & Segar] *1064
  delayed reaction time as cause of aeroplane accidents, 783—ab
  nonphysical standards for flyers, 1771
  physical qualities of aviators, 1229—E
  service and physician, 1098—E
  visual factors in, [Fridenberg] *991, [Fisher & Lewis] 1625—C
AXILLA, epithelioma involving, [Riggs] 342—ab
  sweating of feet and, 91—T
AZOTEMIA in prognosis, [Widal & others] (37) 422

B

BABIES, saving 100,000, 865
BABINSKI test, 2018
BACILLUS, aerobic spore-forming, giving gas in lactose broth isolated in water examination, [Meyer] (32) 730
  aerogenes capsulatus, action of antiseptics on toxin of, [Taylor & Austin] (68) 1036
  aerogenes capsulatus, mechanism of infection with, [De Kruif & Bollman] (75) 127
  aerogenes capsulatus, toxin of, [De Kruif & others] (74, 75) 127
  Carriers: See under names of diseases
  mucosus capsulatus causing unusual skin infection associated with bladder drainage after prostatectomy, [Graham] (107) 1191
  murisepticus in rodents, [Mori] (85) 817
  Tuberculosis: See Tuberculosis bacillus
  Typhoid: See Typhoid bacillus
BACKACHE, [Marshall] (41) 885
  diagnosis in, [Sever] (29) 126
  genito-urinary causes of, [Baker] (4) 650
BACKWARDNESS: See Feeble-mindedness
BACTEREMIA, typhoid, during course of miliary tuberculosis, [Bloomfield] (23) 1119
BACTERIA and vitamins, 1164—E
  classification of, as to diastase production, [Allen] (33) 730
  culture, simple and reliable method of making partial-tension plates, [Cohen] *84
  extraction of precipitin antigen from, rapid simple method for, [Krumwiede] 1329—ab
  fate of bacterial spores in animal body, [Kosor & McClelland] (83) 127
BACTERIOLOGY, ascending cultures in, [Gorini] (51) 1404
  early history of, in United States, 1946—E
BAHIA MEDICAL JOURNAL, semicentennial of, 1320
BALANITIS, gangraenosa, subcutaneous injections of oxygen in, [Sutton] *675
BALANTIDIUM coli infection in Oklahoma, [Young & Walker] *507
BALLARD'S Snow Liniment, 408—P
BANANA as food, 1301—ab
BANGS sound syringe, improvement on, [Hühner] *154
BANTI'S DISEASE: See Anemia, Splenic
BARANY chair tests and flying ability, [Lewis & others] 1559—C, [Parsons & Segar] 1879—C
  chair tests and flying ability, correlation study of 100 naval aviators, [Parsons & Segar] *1064
  syndrome, [Holmgren] (127) 66
  tests in examination of aviators, 1096—E
BARBITAL, 459
BARBOUR'S linen flax thread as substitute for Pagenstecher thread, [Tracy] 1787—C
BARÉTY, death of, 1111
BARIUM sulphate for roentgen-ray work, 1599
BASEDOW'S disease: See Goiter, Exophthalmic
BASY Bread, 407—P
BATHS and health resorts, French, 45
BATTLE front, nuisances of, 1005—E
BED, camp, [Bonnette] (56) 494
  device for facilitating drainage of empyema thoracis, [Roth] *1455
BEETS, acetic acid and acetone from, 928—ab
BELGIAN and French physicians, contributions for, [Keen] 338—C, 873—C, 1788—C
BELGIUM, infant welfare work in, [van Roy] (45) 657
BELL, Clark, Tuberculosis Congress founder dies, 713
BELL-ANS (Papayans, Bell), 557—P
BENCE-JONES proteinuria, 541—E
  proteinuria, association of aminoaciduria with, [Simon] *224
BENN Capsules, 718—P
BENZENE: See Benzol
BENZOL, action of, spontaneous infections with reference to diphasic leukopenia (rabbit), [Weiskotten & Steensland] (79) 127
  and roentgen rays in polycythemia vera, [Hurwitz & Falconer] *1143
  in leukemia, [Vaquez & Yacoel] (43) 1506
BERIBERI and milling process in war time, 1000—E
  in Spain, [Martinez] (95) 1803
  infantile, sugar in blood in, [Suzuki] (49) 61
BETANAPHTHYL Salicylate, 459
BEVERIDGE Patent, 115—P
BILE ducts, stones in, detection of, by means of wax tip, [McWhorter] *757
  resorption in jaundice, anatomic observations concerning mechanism of, [Oertel] (25) 343
  tract, recurrence of symptoms following operations on, [Judd] (56) 1500
BILHARZIOSIS, electric treatment of, [Desnos] (42) 737
  in South Africa, [Cawston] *439
BILLINGS, Major Frank, assigned to Provost Marshal General's office, 169
  transferred to Surgeon-General's office, 853
BINET-SIMON tests and mental deficiency, [Priestley] (2) 655
BINOCULARS, spy glasses and telescopes, Navy's call for, 393
BIRKETT, Herbert S., returns, 552
BIRMINGHAM, Henry P., new commandant for Medical Officers' Training Camp, 784
BIRTH certificates, value of, 187—ab
  rate and lead, [Palmer] 779—ab
  rate, declining, means to arrest, [Richet & others] (52) 61
BISMUTH iodid and emetin in amebic dysentery, [Lambert] (8) 734
  iodoform paste in compound fracture, [Leibinger] (71) 56
  iodoform petrolatum paste in recent wounds, [Emerson] *79
  paste in war surgery, [Beck] (41) 1500
BITES, serotherapy in scorpion stings, [Villela] (65) 423
  spider, [Gougerot] (35) 421
BLADDER, absorption of drugs and poisons from urethra and, [Macht] (62) 1189
  calculus concealed by sessile pedunculated median lobe with prostatic adenomas, [Lydston] *1297
  calculus in children, [Borobio] (90) 1342
  calculus, large, [McCandliss] *604
  condyloma of, [Baker] *442
  control, dystrophy with loss of, [McKendree] (101) 1501
  drainage, new technic for, [Jack] *1225
  excision of diverticula after intravesical invagination by suction, [Young] (82) 571
  foreign body in, [Macias] (91) 1044, [Legueu] (59) 1506
  gangrene of, anaerobic, [Legueu] (53) 1506
  hemorrhage in wall of, and urinary symptoms in war nephritis, [Peters & Stevens] *1760
  myiasis of, [Mendez] (101) 1641
  of women after operation, [Curtis] 1974—ab
  orifice following perineal prostatectomy, study of, [Watson] (56) 269
  [illegible] pretation
  [illegible] *154
  tumors, [Falbing] (105) 580

BLADDER, tumors of urinary, [Judd & Harrington] (100) 733
  ulcer, rare type of, [Hunner] *203
  urinary obstruction at orifice of, median bar excisor for, [Braasch] *758
  wounds of, [Cathelin] (68) 1897
  wounds of, in war, [Mioni] (33) 2058
  wounds of, suprapubic, suction drainage of, [Bethune] *1820
BLASTOMYCOSIS and tuberculosis, [Sanfelice] (61) 1267
  with laryngeal involvement, case of, [Downing] *85
BLIND soldiers, château given for, 1964
  soldiers, reeducation of, [Bordley] 1931
  thermometer for, 1554
BLINDNESS: See also Ophthalmia Neonatorum
BLINDNESS from industrial use of 4 per cent. admixture of wood alcohol, [Robinson] *148
  prevention of, 1320
BLOOD, agglutination in, [Fahræus] (101) 1900
  agglutination of human red blood corpuscles by horse serum, [Williams & Patterson] *1754
  analysis of, in eclampsia and allied intoxications, [Slemons] (18) 1792
  autohemagglutination experimentally induced by repeated withdrawal of blood, [Robertson & Rous] (64) 1794
  calcium in, 313—E
  carbon dioxid capacity of, and respiration, 924—E, [Henderson & Haggard] (61-64) 957
  chemical analysis of, as index to treatment, [McLester] (67) 571
  chemical changes in urine and, in progressive muscular dystrophy, [McCrudden & Sargent] (41) 650
  chemical methods in differential diagnosis of cardiac and renal disease, [Gradwohl & Powell] (103) 1894
  chemical observations in urologic cases, [Squier & Myers] (58) 1189
  chlorid content of, and excessive gastric secretion, [Goyena & Petit] (87) 740
  chlorin in, of new-born, [Cannata] (81) 64
  cholesterol estimations in, [Henes] 50—C
  cholesterol in, [di Stefano] (59) 659
  cholesterol, relation of diet, lymphoid defense and, [Luden] (46)
  circulation in man in head-down position and method for measuring venous return to heart, [Henderson & Haggard] (28) 1891
  clots, organization of, after autotransplantation, homoiotransplantation and heterotransplantation, [Loeb] (53) 810
  clotting, prevention of, by Dakin's sodium hypochlorite solution, [Githens & Meltzer] 1115—C
  coagulation in, in certain pathologic conditions, [Pettibone] (72) 886
  coagulation time of, of tuberculous patients, [Burns & Young] (2) 191
  corpuscles, granular red, count of, [Ravenna] (82) 1802
  corpuscles, nucleated red, in peripheral blood, appearance of, [Drinker & others] (78) 652, (69) 1036
  corpuscles, red, count and hemoglobin content of blood in disordered action of heart, [Levy] (14) 59
  corpuscles, red, occurrence of mitochondria in, during experimental anemias, [Sappington] (28) 1891
  corpuscles, resisting power of, tests of, [Chauffard & Huber] (48) 1639
  Corpuscles, White: See Leukocytes
  counts, ante-operative and postoperative, in noninfective surgical conditions, [Meleney] (15) 955
  creatinin and creatin in, 780—E
  creatinin content of, [Tchertkoff] (64) 494
  crystals in, and date of death, [Valverde] (84) 1576
  cultures, color reaction in, [Lévy] (59) 815
BLOOD dextrose as affected by morphin and morphin with ether anesthesia, [Ross] (49) 1978
  fat and lipoids of dog before and after production of experimental anemia, [Dubin] (34) 1188
  fatty acids in, in normal and pathologic conditions, [Csonka] (40) 1188
  films, method for decolorizing and staining, [Lacy] 1486—C
  flow, and cold bath, 696—E
  flow, effect of epinephrin on, in muscles, [Gruber] (19) 808
  hemoglobin content of, and red blood cell count in disordered action of heart, [Levy] (14) 59
  hydrogen ions in, in different diseases, [Sonne & Jarløv] (90) 661
  in carbon monoxid poisoning, [Williams] 119—C
  in prematurely born, [Lichtenstein] (135) 1046
  in shock and hemorrhage, alterations in distribution and character of, [Cannon & others] *526
  in typhus, [Danielopolu] (32) 1571
  injection of citrated blood in superior longitudinal sinus in hemorrhagic disease in newborn, [Berghausen] *514
  nomenclature for diseases of, [Bie] (102) 896
  occult, in feces, new method for detection of, [Lyle & Curtman] (57) 417
  occult, test for, [Thévenon & Rolland] (43) 656
  oxygen deficit in venous blood, 696—E
  peripheral, factors concerned in appearance of nucleated red blood corpuscles in, [Drinker & others] (69) 1036
  peripheral, phagocytic mononuclear cell in, simple technic for demonstration of, [McJunkin] (23) 343
  picture in Cubans, [Plasencia] (111) 1045
  plasma, chlorid content of, 852—E
  plasma, proteins of, 389—E
  platelet count of human blood and its vasoconstrictor action after clotting, [Hirose] (22) 1891
  precipitin test for, [Hektoen] *1273
  pressure, [Fulchieiro] (73) 660
  pressure and hemoglobin in postoperative shock, postoperative hemorrhage and postoperative cardiac dilatation, clinical study of, [Polak & Heffter] (119) 959
  pressure and pulse rate as aid in head traumas, [Sieber] (7) 568
  pressure, arterial, in children paralyzed from poliomyelitis, [Souques] (18) 348
  pressure, arterial, record of, [Barré] (44) 1040
  pressure, general, effect of diuretics on, in animals with constriction of renal arteries, [Bridgman & Hirose] (31) 1033
  pressure, high, in sciatica, [Galtior] (32) 349
  pressure, high, in soldiers with heart disease, [Merklen] (20) 348
  pressure, high, in war tachycardia, [Aubertin] (32) 1338
  pressure, high, occurrence of Bence-Jones proteinuria with reference to nephritis and, [Miller & Baetjer] *137
  pressure in gout, [Rosenbloom] *2000
  pressure in head injuries, [Armitage] (133) 654
  pressure in typhus, [Danielopolu & Simici] (36) 961
  pressure in wound conditions, [Fraser & Cowell] *520
  pressure, influence of music on electrocardiograms and, [Hyde & Scalapino] (12) 1566
  pressure, low, administration of epinephrin by intraspinal injections in acute or subchronic cases with, [Auer & Meltzer] *70
  pressure, maximal, palpation for determination of, [Baumann] (61) 200
  pressure, peripheral, in fibrillation of auricles, [Cohn & Lundsgaard] (36) 1259
BLOOD pressure, relation of, to convulsions, [Ervin] *1208
  pressure, study of, by method of Gaertner, especially in fibrillation of auricles, [Cohn & Lundsgaard] (35) 1259
  pressure, venous, simple method for determining, [Brown] (25) 1333
  proteins, studies on, [Meyer & others] (74) 193, (38) 486
  regeneration of, factors in, 1865—E
  regulation of urea excretion by concentration of urea in urine and, [Addis & others] (8) 1566
  reinfusion of extravasated, [Alessandri] (36) 2058
  serum, auto-agglutination in, [Clough & Richter] (24) 1333
  serum, vasoconstrictor action of, experiments on, [Janeway & others] (21) 1891
  substitutes for transfusion after hemorrhage, [Rous & Wilson] *219
  sugar in, in diabetes, effect of diet on, [Mosenthal & others] (27) 343
  sugar in, in diabetes, significance of, 541—E
  sugar in, in infantile beri-beri, [Suzuki] (49) 61
  sugar in, tests for, [Leschly] (111) 1578
  sugar tolerance test, [Janney & Isaacson] *1131
  transfusion after hemorrhage, fluid substitutes for, [Rous & Wilson] *219
  transfusion in anemia, [Ravaut & de Kerdrel] (39) 891
  transfusion in measles, [Ribadeau-Dumas & Brissaud] (23) 1798
  transfusion in war surgery, results of, [Robertson & Watson] (5) 59, (4) 568
  transfusion, modification of Moss method of determining isohemagglutination groups, [Sanford] *1221
  transfusion, new method, [Kreuscher] *223
  transfusion of citrated blood, [Hédon] (34) 1125, [Murard] (70) 1897
  transfusion of citrated blood, simple technic for, [Rieux] (45) 1639
  transfusion, preliminary tests to, [Coca] 1497—ab
  transfusion, rapid macroscopic agglutination test for blood groups and its value in testing donors for transfusion, [Vincent] *1219
  transfusion, selection of suitable donors for, simple and rapid method for, [Lee] (7) 59
  transfusion with tested, grouping of 1,000 bloods and method for use at advanced hospitals, [Karsner] *769
  venous, oxygen unsaturation in, with circulatory disturbances, [Lundsgaard] (75) 652
  vessels, large, in buttocks, exposure of, [Fiolle & Delmas] (57) 577
  vessels, wounds of, 1620
  viscosity of, in relation to heart and kidney disease, [Brandan] (86) 496
  viscosity of, with experimental anemia, [Saneyoshi] (59) 277
  volume, total, in pernicious anemia, [Lindeman] *1292
"BLUES," damages for, 879—Ml
BOILS and carbuncles, 1158—T
  oil, of shell turners, 1247
BOLOGNA professors, prize for, 183
BONE clamp, electro-operative, [Albee] (76) 1795
  cysts and sarcoma, [Platou] (76) 278, (32) 1119
  disease, roentgen diagnosis of, [Lund] (97) 65
  effect of phosphorus on growing, normal and diseased bones, [Phemister] *1737
  elasticity and solidity of, [Mayeda] (82) 353
  fat embolism following trauma to, [Caldwell & Huber] (129) 58
  formation of, and periosteum, [Leriche & Policard] (49) 1639
  grafting, [Bérard] (70) 1195
BONE marrow, metastatic cancer of, without erythroblastic reaction, [Jack & Teacher] (7) 1038
  myeloid sarcoma and cystic disease of, [Faulds & Teacher] (10) 735
  Paget's disease of, repair after surgical operations, [Abbe] *371
  regeneration, studies in, by vital stain, [Brooks] (42) 192
  transformation, Wolff's law of, [Keith] (30) 961
  transplantation, [Gallie & Robertson] *1134
  transplantation in surgical treatment of paralytic feet, [Fuld] (18) 955
  tuberculosis of, congenital syphilis basis for, [Caronia & Marinucci] (43) 350
  tuberculosis of, treatment of, 1877
BONITA, healer, 870—P
  the beautiful, 927—E
BORDEAUX, preparatory school of medicine at, 111
BOWEL: See Intestine
BOYS, physical deterioration of, under war conditions, 1876
BRADYCARDIA, atropin in, [de Haas] (127) 1046
  false, [Ramond & Petit] (50) 1573
BRAIN: See also Cerebellum; Pineal Gland; Pituitary Body; Skull
BRAIN abscess, autovaccine in, [Villandre & Rochaix] (49) 131
  abscess of occipital lobe, [Martini & Berterini] (93) 818
  development of nervous system and, in young children, [Collin & Godet] (30) 890
  foreign body in, extraction with aid of roentgenoscopy, [Rayner & Barclay] (2) 1038
  hemorrhage in newborn, [Hedren] (96) 1988
  heredity and convolutional patterns of, 1540—E
  hernia of, [Aigrot] (44) 575
  injury, traumatic edema causing late signs of focal cortical irritation, report of case, [Espejo] *1278
  prolapse of, with wounds of skull, [Novikoff] (67) 277
  syphilis of cord and, subdural injections of salvarsanized mercurialized serum in, [Nicholson] (122) 888
  tumor, [Xavier] (71) 1985
  tumor, removal of, patient survived for more than 30 years, [Keen & Ellis] *1905
  tumors, diagnosis of subtentorial tumors, [Chiappori] (96) 1044
  tumors, differential diagnosis of, [Castex] (95) 1044
  tumors, mental disturbances with, [Borda] (94) 1044
  tumors of temporal lobe, [Ciuffini] (67) 659, (52) 1126
  tumors proving to be carcinoma of nasopharyngeal origin, [McKendree] (95) 1501
  tumors, roentgen therapy in, present status of, [Nordentoft] (109) 1510
  wounds of, penetrating, [Cushing] (1) 1038
BRAISTED, W. C., reappointed Surgeon-General, 543
BRAN bread, 721
BRAUN Health Institute, 870—P, 927—E
  John F., healer, 870—P
  Kate A., healer, 870—P
BRAZIL, arrow poison from, [Santesson] (118) 136
BRAZILIAN medical congress, eighth, 1245
  medical mission, 1877
BREAD, bran and potato, 721
  card, 714
  made directly from wheat grain, 1391, [Leprince & others] (30) 1638
  ration of contagious disease hospitals, 1784
  restrictions concerning the regulation, 1391
  war, 405
  war, from biologic standpoint, [Weill & Mouriquand] (40) 1799
  war, scientific report of, 1619
BREAST cancer and lactation, [von Steiger] (47) 1404
  cancer and marriage, [Deelman] (117) 967
  cancer in infants, 905—ab
  functions of, 1298—E
  Nursing: See Infant Feeding

BREAST pump, clay pipe as, 1521—ab
  squamous epithelial tumor of, 2 cases, [Johnson & Lawrence] (4) 812
  tumor from shell air shock, [Velyaminoff] (112) 1270
BREATH holding in children, 1563
BREATHING, altered, as factor in diminished alkali reserve, 1662—E
  forced, influence on circulation, [Henderson & others] (39) 1891
BRIDGE, gold, sloughing of gums after installation of, 1970
BRILL'S DISEASE: See Typhus Fever
BRILLIANT GREEN as bactericidal agent for purification of vaccine virus, [*Krumwiede & others*] (34) 570
  in recently inflicted gunshot wounds, [Massie] (46) 1895
  sterilization of skin and other surfaces by mixture of crystal violet and, [Bonney & Browning] (3) 2056
BRITISH Army, Navy, Soldiers, etc.: See under Army, Navy, etc.
  Medical Journal under handicap, 795
  medical profession, another appeal to, 1233—E
  Military Cross awarded to American medical officer, 1234
  zone of advance, [de Tarnowsky] *771
BROMID, action of iodid, nitrate ions and, on respiratory center, [Macht & Hooker] (90) 887
BROMIDIA, 642—P
BRONCHIAL GLANDS, tuberculous, [Schmiegelow] (125) 1199
BRONCHIECTASIS, [Bergstrand] (126) 1200
  treatment of, [de Jong] (106) 1342
BRONCHITIS, heart in soldiors with pneumonia or, [Morelli] (48) 422
  hexamethylenamin in, [Neves] (31) 814
BRONCHOPNEUMONIA, postmortem findings in measles-bronchopneumonia and other acute infections, [Lucke] *2006
BRONCHUS, foreign body in, evacuated spontaneously after 2 years, 112
BUENOS AIRES, Academy of Medicine of, official organ of, 1962
  charitable institutions of, [Coni] (86) 579
  letter, 1321
  welfare work at, [Coni] (98) 1900
BULGARIAN Bacillus Tablets—Mulford, 623
BULLET, *Localization of: See under Foreign Body*
  Wound: See Wound, Gunshot
BULLETIN of Chicago Health Department, *evolution of, [Evans]* 1629—ME
  of United States Army General Hospital No. 2, 1541
  on *war surgery and medicine*, 697
BUREAU *of Mines, report of*, 519—ab
BURIALS after battle, [Bosredon] (38) 815
BURNS, paraffin film dressing for, *[Fremiet & Pfulb] (37) 575*
  paraffin treatment of, [Hull] (4) 196
  tin sprayer for melted paraffin in treatment of, [Stanley] 1489—C
BUTTER substitutes, tax on, 164—E, [Leifmann] 480—C, [Belknap] 802—C
BUTTERMILK, [Fynn] (116) 1642
BUTTOCKS, exposure of large blood vessels in, [Fiolle & Delmas] (57) 577

BOOK NOTICES

Ambulance de "L'Océan" la Panne, 1883
Antiseptics, Handbook of, 261
Army Medical Officers, Notes for, 123
Bacteriology, Medical, 188
Barton, G. E., *Re-Education*, 339
Binnie, J. F., Treatise on Regional Surgery, 952
Biology, Fresh-Water, 1117
Blair, V. P., *Surgery and Diseases of Mouth and Jaw*, 1117
Bundy, E. R., Surgical Nursing in War, 724
Cardiology, Clinical, 877
Chekhov, A., *Nine Humorous Tales*, 1326
Cobb, I. G., Organs of Internal Secretion, Their Diseases and Therapeutic Application, 876
Conduction of Nervous Impulse, 803
Coppez, H., Soins Oculaires, 1186
Dakin, H. D., Handbook of Antiseptics, 261
Dawson, E. R., Causation of Sex in Man, 123
De Lee, J. B., Obstetrics for Nurses, 340
Depage, A., Ambulance de "L'Océan" la Panne, 1883
Dercum, F. X., Clinical Manual of Mental Diseases, 1186
Dermatology, Principles and Practice of, 952
Dietary Computer, Practical, 339
Dietetics for Nurses, 482
Doctor's Diary in Damaraland, 646
Downing, E. R., Third and Fourth Generation, 1491
Dunham, E. K., Handbook of Antiseptics, 261
Eggleston, C., Essentials of Prescription Writing, 1326
Electro-Therapy in Gynaecology, 1491
Face, Injuries of Jaw and, and Their Repair, 804
Friedenwald, J., Dietetics for Nurses, 482
Gardner, S. M., Manual Laboratory Diagnosis, 482
Genito-Urinary Surgery and Venereal Diseases, White and Martin's, 51
Gerster, A. G., *Recollections of a New York Surgeon*, 561
Gonorrhea, Text-Book on, and Its Complications, 1028
Goodnow, M., War Nursing, 1186
Goodwin, T. H., Notes for Army Medical Officers, 123
Governmental Provisions in the United States and Foreign Countries for Members of the Military Forces and Their Dependents, 52
Greene, C. L., Medical Diagnosis for Student and Practitioner, 561
Greene, C. W., Kirkes' Handbook of Physiology, 646
Greenwood, A., Military Ophthalmic Surgery, 723
Health Insurance, National, 188
Hutt, C. W., Future of the Disabled Soldier, 1491
Hygiene, Elements of Public Health and, 52
Impotence and Sterility with Aberrations of Sexual Function, and Sex Gland Implantation, 482
Infantile Paralysis, Treatment of, 724
Injured, Immediate Care of, 1397
Internal Secretion, Organs of, Their Diseases and Therapeutic Application, 876
Jaw, Injuries of Face and, and Their Repair, and Treatment of Fractured Jaws, 804
Jaws, Surgery and Diseases of Mouth and, 1117
Jenness, B. F., Service Rhymes, 561
Keen, W. W., Medical Research and Human Welfare, 339
Keller, W. L., Splints and Appliances for Medical Department of United States Army, 1491
Kirkes' Handbook of Physiology, 646
Knox, R., *Radiography and Radio-Therapeutics*, 1564
Laboratory Diagnosis, Manual of, 482
Lecithin and Allied Substances, 1631
Lincoln, M. C., *Manual of Laboratory Diagnosis*, 482
Lovett, R. W., Treatment of Infantile Paralysis, 724
Lucas, K., Conduction of Nervous Impulse, 803
Luys, G., Gonorrhea and Its Complications, 1028
Lydston, G. F., Impotence and Sterility with Aberrations of Sexual Function, and Sex Gland Implantation, 482
McCarrison, R., The Thyroid Gland in Health and Disease, 411
Maclean, H., Lecithin and Allied Substances, 1631
Martin, E., White and Martin's Genito-Urinary Surgery, 51
Martinier, P., Injuries of Face and Jaw and Their Repair, and Treatment of Fractured Jaws, 804
Massage: Its Principles and Practice, 123
Medical Diagnosis for Student and Practitioner, 561
Medical Record Visiting List, or Physician's Diary for 1918, 123
Mennell, J. B., Massage: Its Principles and Practice, 123
Mental Diseases, Clinical Manual of, 1186
Mental Hygiene, Principles of, 339
Military Ophthalmic Surgery, 723
Milk, Examination of, for Public Health Purposes, 1631
Moorhead, S. W., White and Martin's Genito-Urinary Surgery, 51
Morrow, A. S., Immediate Care of Injured, 1397
Mouth, Surgery and Diseases of Jaws and, 1117
Mysticism, Problems of, and Its Symbolism, 723
National Health Insurance, 188
Neuhof, S., Clinical Cardiology, 877
Neurosyphilis, Modern Systematic *Diagnosis and Treatment* Presented in 137 Cases, 561
Nine Humorous Tales, 1326
Nursing, War, 1186
Obstetrics for Nurses, 340
Ophthalmic Surgery, Military, 723
Oral Roentgenology, 1186
Physical Diagnosis, 723
Physician's Visiting List (Lindsay and Blakiston's) for 1918, 123
Pilcher, L. S., Fractures of Lower Extremity, 51
Pope, A. E., Practical Dietary Computer, 339
Porter, C., Elements of Hygiene and Public Health, 52
Porter, W. T., Shock at *Front, 1028*
Prescription Writing, Essentials of, 1326
Public Health, Elements of Hygiene and, 52
Pusey, W. [illegible] tice of [illegible]
Race, J., [illegible] Public [illegible]
Radiograph, [illegible] ties, 1564
Radius, Fractures of Lower Extremity or Base of, 51
Recollections of a New York Surgeon, 561
Re-Education: Analysis of Institutional System of United States, 339
Reference Handbook of Medical Sciences, 123
Research, Medical and Human Welfare, 339
Rivers, W. C., Three Clinical Studies in Tuberculous Predisposition, 724
Roddy, J. A., Medical Bacteriology, 188
Rose, W. D., Physical Diagnosis, 723
Ruhräh, J., Dietetics for Nurses, 482
Service Rhymes, 561
Sex, Causation of, in Man, 123
Shock at the Front, 1028
Silberer, H., Problems of Mysticism and Its Symbolism, 723
Sloan, S., Electro-Therapy in Gynaecology, 1491
[illegible] re of, 1491
[illegible] osyphilis, 561
[illegible] syphilis, Mod- [illegible] diagnosis and
[illegible] for the Med- [illegible] United States Army, Manual of, 1491
Stedman, T. L., Reference Handbook of Medical Sciences, 123
Sterility and Impotence, with Aberrations of Sexual Function, and Sex Gland Implantation, 482
Stokes, J. H., Third Great Plague; Discussion of Syphilis for Everyday People, 877
Subnormality, Problems of, 260
Surgery, Regional, Treatise on, 952
Surgical Nursing in War, 724
Third and Fourth Generation, 1491
Third Great Plague; Discussion of Syphilis for Everyday People, 877
Thoma, K. H., Oral Roentgenology, 1186
Thomas, B. A., White and Martin's Genito-Urinary Surgery, 51
Thyroid Gland in Health and Disease, 411
Tuberculous Predisposition, Three Clinical Studies in, 724
Venereal Diseases and Genito-Urinary Surgery, White and Martin's, 51
Virginia Health Bulletin, 1916, 723
Walker, H. F. B., Doctor's Diary in Damaraland, 646
Wallin, J. E. W., Problems of Subnormality, 260
Ward, H. B., Fresh-Water Biology, 1117
Whipple, G. C., Fresh-Water Biology, 1117
White, W. A., *Principles of Mental Hygiene*, 339
White and *Martin's Genito-Urinary Surgery* and Venereal Diseases, 51
Wolfe, S. H., Governmental Provisions for Members of Military *Forces, 52*

C

CACTINA PILLETS, 185—P
CALCANEUM, fracture of, [Delitala] *(40) 350, [Elken] (110)* 1578
CALCIUM, [Bulman] (60) 351
  and magnesium metabolism, studies in, [Givens] (41) 1567
  in blood, 313—E
  iodin in tuberculosis, 481
CALCULI: See *under* Organs
CALIFORNIA medical news, 250, *471, 635, 939, 1108, 1175, 1242*, 1549, 1958
  state *board July examination, 1027*
  Tuna Tonic Tablets misbranded, 1183—P
  venereal disease problem in, [Irvine] *150
CALIPER, value of, in obtaining extension in compound fractures *of femur*, [Besley] *87
  [illegible] and forma- [illegible] 86) 1900
  [illegible] ani, [Ham-
CALORIMETRY, [illegible] al, influence of mechanical work on protein *metabolism during* height of meat digestion in dog, [Atkinson] (35) 1188
  clinical, effect of small breakfast on heat production, [Soder*strom & others] (23) 1891*
CAMP, abandoned, investigation needed, 169
  Cody, news of, 701
  Custer, news of, 35
  Dix, genito-urinary diseases at, [*Townsend*] *682
  Dodge, news of, 630
  Funston, news of, 174, 324, 395, 1167
  Grant, medical service at, [Baum] 563—ab
  Grant, news of, 701, 1008, 1102, 1167
  Hancock, news of, 99, 242, 466, 701, 785, 854, 930
  Jackson, epidemic of meningitis at, [Herrick] *227
  Jackson, news of, 243, 1166
  Lee, news of, 172
  Logan, news of, 99, 394, 629, 930
  Pike, news of, 35
  Shelby, news of, 322
  Shelby, zone sanitation *for*, 98
  Sherman, news of, 100, 1007
  Upton Base Hospital issues new publication, 1950
  Wheeler, news of, 35, 99, 171, 242, 322, 393, 466, 930, 1102, 1236, 1471
  Zachary Taylor, hemolytic streptococcus causing severe infections at, [Alexander] *775
  Zachary Taylor, news of, 101, 172, 243, 323, 395, 544, 629, 701, 785, 854, 931, 1008, 1102, 1166, 1236, 1471, 1544, 1609
CAMPHO-PHENIQUE seeks new graduates, 408—P
CAMPHOR, *action of*, on heart, [Sigerist & Zangger] (52) 658
CANADA, federal department of public health for, 471—ab
  medical news, 42, 109, 183, 252, 331, 474, 552, 638, 713, 794, 864, 943, 1019, 1110, 1179, 1319, 1389, 1481, 1552, 1617, 1782, 1874
  nostrum evil in, 407—P
CANADIAN medical week, 1481
  Military Hospital Commission, 639
  students continue studies, 1320
CANCER: See also Tumor and under organs and regions
CANCER, *acceleration of growth of*, by cholesterol and tethelin, part played by *hydroxy-benzol* radical in, [Robertson & Burnett] (42) 730
  achlorhydria without, [Raymond *& others] (41) 198*
  antitrypsin in diagnosis of, [Kurata] (3) *347*
  as problem of social medicine, [*Aviles*] (85) 1509
  control, *332*
  control of, and industrial physicians, 915—ab
  economic importance of, [Gade] *(130) 1272*
  emetin in, [Lewisohn] *9
  fever, [Pedrini] (59) 423

CANCER, Franco - Anglo - American League against, 1248
  influence of pregnancy on progress, development and recurrence of, [Bainbridge] (3) 342
  magnesium and, [Dubard] (18) 1798
  metastatic, of bone marrow without erythroblastic reaction, [Jack & Teacher] (7) 1038
  miostagmin reaction with, [Roffo] (99) 819, [Salvesen] (127) 1272
  mortality, 1246
  mortality, and tuberculosis mortality in Netherlands, [Delman] (105) 135
  on bird's claw, [Urra] (88) 1900
  pathogenesis of, [Yamagiwa & Ichikawa] (38) 730
  prize offered for work on biochemical causes of, 795
  question, [del Toro] (84) 1509
  radium and roentgen rays in, biologic and clinical evidence of therapeutic value of, [Lovin & Levine] (47) 1500
  radium in, of lip, [Janeway] *1051, [Scott] 1255—C
  recurrence of, prophylaxis of, [Morales] (109) 1270
  retrogression of, [Pianese] (77) 660
  Skin: See also Epithelioma
CANTHARIDES poisoning with reference to blood picture, case of, [Lipsitz & Cross] (18) 125
CANTONMENTS, news of, 35, 99, 171, 242, 322, 393, 466, 544, 629, 701, 785, 854, 930, 1007, 1102, 1166, 1236, 1471, 1544, 1609
CARBOHYDRATE metabolism, influence of thyroid feeding on, [Kuriyama] (74, 75) 417
CARBON dioxid capacity of blood and respiration, 924—E, [Henderson & Haggard] (61-64) 957
  monoxid poisoning, [Bock] (117) 820
  monoxid poisoning, blood in, [Williams] 119—C
CARBUNCLES and boils, 1158—T
CARCINOCHONDROSARCOMA, significance of cartilage of, [Woglam] (40) 730
CARCINOMA: See Cancer
CARDIA, cancer at junction of esophagus and, operative cure of, [Birchner] (65) 1640
CARDIORENAL DISEASE: See under Heart and Kidney
CARDIOSCLEROSIS, occasional type of loud systolic murmur in, [Neuhof] *1140
CARDIOVASCULAR and tuberculosis examination of soldiers, 321
  disease, anamnesis in, [Brady] *1449
  disturbances in typhus, [Danielopolu] (29) 574, [Heitz] (38) 961
  examinations, 540—E, [Fisk] 558—C
  examinations at base hospital, Camp Hancock, government, analysis of, [Smith] *911
  examinations at Camp Dodge, [Feil] (55) 1035
  examinations in army, classification of abnormalities with reference to rejection, acceptance or special service of recruits, [Butler] *844
CAROTID aneurysm, unilateral ophthalmoplegia due to, [Viets] (61) 1569
CARREL and Dakin Solution: See also Dakin Solution
CARREL and Dakin solution, report on use in Dr. Deaver's service, [Bodley & others] (75) 811
  and Dakin treatment, aids in use of, glass automatic siphon for delivering definite amount of fluid to wound at definite period of time, [Bornstein] *1820
  commander of Legion of Honor, 1964
  drainage of pleura, [Costantini & Vigot] (56) 963
CARRIERS: See also under names of diseases, i. e., Diphtheria carriers, Typhoid carriers, etc.
CARRIERS, bacteria, [Silberschmidt] (81) 1196
  discharge of, into civil communities, 794
CARTILAGE grafts, fate of, [Leriche] (52) 575
CASTILLA, death of, 1180
CATALASE content of tissues, effect of pancreatectomy on, [Kennedy & Burge] (19) 125
CATALASE, effect of alcoholic intoxication on, [Burge] (7) 124
  in shock, [Burge & Neill] (17) 808
CATARACT, liability for, where no operation is had, 1186—Ml
  operation and age, [Fernandez] (101) 1198
  postoperative results of, [Fernandez] (86) 966
  vacuum extraction of, [Manes] (90) 1900
CATARRHAL Vaccine Combined—Lilly and Influenza Mixed Vaccine—Lilly, 1968—P
CATGUT netting to stimulate granulation in wounds, 228—ab
CATHOLIC Hospital Association, meeting of, 1961
CAUSALGIA, ligation for, [Lortat-Jacob & Hallez] (37) 1982
  surgical treatment of, [Tenani] (47) 1126
CECUM, nonmalignant tumors of, (91) 425
  palpation of, [Pron] (41) 1039
CELLULOID in correction of nasal deformities, [New] *988
CEREBELLUM symptoms, [Munigurria] (93) 425
CEREBROSPINAL FLUID, does colloidal gold curve in psychiatric cases always indicate syphilis of nervous system, [Weston] (7) 883
  drainage of, and inunctions of mercury in paresis, [Finlayson] (7) 1977
  formation and composition of, method of detecting acidosis and determining hydrogen ion concentration, [McClendon] *977
  functions of, 93—E
  in general paralysis, [Sicard & Roger] (25) 1798
  leukocyte count in, [Condat] (27) 814
  passage of alcohol into, [Lenoble & Daniel] (33) 421
  passive transfer of antibodies to, experiments on, [Kolmer & Sekiguchi] 1498—ab
  variations in pressure of, [Cottin & Saloz] (42) 1403
CEREBRUM: See Brain
CERTIFICATES must be filed for record as prescribed, 340—Ml
  remedy where board revokes, 2050—Ml
CESAREAN SECTION for eclampsia, [San Martin] (86) 661
  indications for, [Cumston] (60) 199
  local anesthesia in, [Trout] 266—ab
  pre-eclamptic, [Poucher] (6) 342
  repeated, for deformed pelvis, [Arteaga & Presno] (71) 353
  scar, spontaneous rupture of, 2 cases, [DeCourcy] *840
CHANCRE of eyelid, [Shaffner] *676
CHARACTERS, acquired, inheritance of, 624—E
CHASE Company, fraud order issued against, 1557—P
CHASE'S Blood and Nerve Tablets, 1557—P
CHASSIS dressing, [Chalier & Benoist] (64) 578
CHAULMOOGRATE and sodium gynocardate subcutaneously and intravenously in leprosy, 2 years experience of, [Rogers] (10) 1192
CHEESE, micro-organisms concerned in ripening of, 1764—E
CHEMICALS, license for sale of, 795
  organic manufacture of, 999—ab
CHEMISTS, enlisted, special duty for, 1950
CHENOPODIUM, oil of, composition of, and anthelmintic value of some of components, [Hall & Hamilton] (43) 1892
CHEST: See Thorax
CHESTNUTS and acorns as sources of carbohydrate, 1158—ab
CHICAGO Evening Post advertising Marmola, 1163—E
  Health Department, Bulletin of, evolution of, [Evans] 1629—ME
  Ophthalmological Society banquet, 1770
  Pedriatic and Infant Welfare Society meetings during annual session of A. M. A., 1770
  Tribune and medical advertising, 1300—E
  water waste in, 927—E
CHICKENPOX and herpes zoster, [Goldberg & Francis] *1061, [Hough] 1255—C
  differentiation of smallpox and, [Tièche] (58) 739
CHILD labor and child welfare in South America, 878—ME
  labor in warring countries, 96—E
  not wilful refusal to provide for, 413—Ml
  welfare legislation in 1916-1917, 149—ab
  welfare work in America, [Comby] (31) 1982
CHILD-BEARING: See Labor; Obstetrics
CHILDREN, acidosis in, [Sawyer & others] (1) 267
  albuminuria in, [Hamelberg] (108) 1577
  appendicitis in, [Porter] (48) 345
  breath holding in, 1563
  cervical glandular enlargement in, as evidence of infection, [Gunson] (3) 655
  fracture of neck of femur in, [Parker] *84
  growth of school children, [Henriksen] (111) 742
  heart block and congenital heart disease in, [Bass] *287
  heart infection in, nature and symptoms of, [Poynton] (9) 1570
  hernia in, [Brossy] (76) 63
  improvement in health of London schoolchildren during war, 795
  indicanuria in, [Schuyler] (94) 489
  intestinal bacteria of, 30—E
  kala-azar in, in France, [Labbé & others] (37) 1638
  kidney calculus in, [Gurgel] (62) 423, [Cifuentes] (89) 1197
  malignant endocarditis in, [Morquio] (83) 1640
  mortality of, 1758—ab
  normal weight of schoolchildren, [Camescasse] (43) 1194
  obligation to care for, [Mackenzie] 1523—ab
  physical status of juvenile delinquents based on physical and clinical examinations of, in reformatories of city of New Orleans, [Bass & Loeber] (107) 1894
  pyelitis in, [Wieland] (83) 817
  recognizing rights of, 1378—ab
  School: See also School, Medical Inspection of
  social problems affecting mother and, [Bar] (42) 1572
  suprarenal hemorrhage in, [Friderichsen] (101) 426
  undernourished, methods used in class for, [Smith] (1) 2053
CHILLING, acroparesthesia from, [Cottet] (43) 1982
CHINA, physicians in danger in, 332
CHIROPRACTIC, notes given to persons practicing medicine without certificate, 562—Ml
  versus osteopathy, evidence of not being licensed physician, 190—Ml
CHLORAMIN in ophthalmology, [de Lapersonne] (70) 1042
CHLORAMINE-B (Calco), 91
CHLORAMIN-T and hypochlorite solutions, behavior of, in contact with necrotic and normal tissues in vivo, [Austin & Taylor] (69) 1794
CHLORAZENE, 459
  Surgical Powder, 459
CHLORCOSANE, 459, 1459
CHLORID content of blood plasma, 852—E
  elimination of, in pneumonia, [Guião] (81) 1986
CHLORIN antiseptics in civil hospital use, [Hartwell] (40) 1500
  in blood of new-born, [Cannati] (81) 64
  shortage, dangers from, 1099—E
CHLORINATED SODA, neutral solution of, in normal peritoneal cavity, [Mann & Crumley] *840
CHLOROFORM, date first used as anesthetic, 1116
CHOLECYSTECTOMY, fate of cystic duct after, [Eisendrath & Dunlavy] (146) 195, 265—ab
  for gallstones, [Abalos] (86) 1406
CHOLELITHIASIS: See Gallbladder Calculus
CHOLEMIA in jaundice, [Garnier & Reilly] (42) 962
CHOLERA, agglutination tests for, [Negroni] (78) 1043
  carriers, bactericidal action of chemicals on cholera vibrios within body of, [Schöbl] (120) 129
  hog, striking results of measures against, 1948—E
  prophylaxis of, [Mazzolani] (69) 1340
  suprarenal insufficiency in seasickness and, [Naamé] (57) 132
CHOLERA, vaccine therapy of typhoid and, [Danysz] (48) 1339
CHOLESTEROL, acceleration of growth of carcinomas by tethelin and, part played by hydroxy-benzol radical in, [Robertson & Burnett] (42) 730
  and fat absorption, 542—E
  in blood, [Henes] 50—C, [di Stephano] (59) 659
  index, [Surraco] (78) 1268
  studies in, relation of diet, blood cholesterol and lymphoid defense, [Luden] (46) 56
CHOREA, bacteriology of, [Quigley] (72) 957
CHRISTIAN Health Institute, 870—P
CICATRICES on face, treatment of, [Poulard] (76) 1898
CIGAR workers, sociologic and medical study of, in Philadelphia, [Miller] (1) 955
CIGARET smoke, effect of inhalation of, on lungs, [Webb] (22) 1119
CINCINNATI General Hospital and University of Cincinnati, closer relationship between, 411
  municipal support of hospitals and medical schools in, 783—E
CIRCULATORY and respiratory systems and anaphylaxis in relation to cause of death, [Petz & Jackson] (52) 1568
  failure from shock and other causes, [Wiggers] *508
CIRRHOSIS of Liver: See Liver, Cirrhosis
CITIES, mortality statistics of, 865
CITRATES, action of tartrates, oxalates and; study in tolerance, cumulation and effect of diet, [Salant & Swanson] (50) 1261
CITY boys not physically inferior to country boys, 97
CIVIL administrative code of Illinois and medical licensure, [Shepardson] *763
CLARK STANLEY'S Snake Oil Liniment misbranded, 1184—P
CLAUDIUS' stain for protoplasm and cilia of bacteria, 873
CLAYTON'S gas treatment of scabies and other skin diseases and vermin, [Clayton] (38) 575
CLIMBING as therapeutic measure, [Jaquet] (36) 1125
CLOTHES fasteners for use of men who have lost one or both arms, 404
CLUBFOOT: See Talipes
COAGULEN-CIBA, 91
COAL-TAR creosote oil in checking of putrefaction and repelling flies, 1005—E
COCAIN addicts, lesion of nasal septum in, [Turtur] (38) 2058
COCCIDIUM, infection with isospora and, in animals in Philippine Islands, [Haughwout] (119) 1262
COD LIVER OIL, 1245, 1319
COFFEE, W. O., turns from mail-order to itinerant quackery, 259
COLD and microorganisms, [Ruata] (37) 1125
  bath and blood flow, 696—E
  effects of heat, fatigue and, in encouraging infections, 674—ab
  storage, actuality of, in food situation, 1540—E
COLDS, common, as possible source of contagion for lobar pneumonia, [Valentine] (47) 268
COLE, Charles Willard, convicted by courts martial, 317
COLECTOMY, physiologic, in chronic toxemias of intestinal origin, [Reed] *1584
COLLEGES, medical, instructions to, 1607
  medical, nonrecognition of, 1034
  premedical course, 560
COLLINS Ague Remedy, 408—P
  Voltaic Electric Plasters, 718—P
COLOMBIA, medical congress of, 1180
  professional interests in, 110
COLON, descending, malposition of, [Cooke] *842
  developmental reconstruction of, [Draper] (16) 1890
  hemorrhage, [Goiffon & Nordmann] (28) 736
  operations, Paul's tube for, [Cumston] (46) 575
  resection of right, [Pauchet] (22) 814
  terminal, sigmoidoscope in diagnosis of disease in rectum and, [McWhorter] *1365
COLOR blindness as loss of sight, 1565—Ml

COLOR perception, [Malling] (109) 742
COLORADO medical news, 329, 635, 939, 1550
  state board January examination, 1185
  state board October examination, 120
COLORIMETER, simple and accurate, for clinical use, [Peebles & Lewis] *679
COLORIMETRIC determination of reaction of bacteriologic mediums and other fluids, [Barnett & Chapman] *1062
COLOSTRUM, origin of, 2029—E
COLUMBIA University School of Medicine, advances proposed at, 560
COMMERCIAL interests, domination of medical profession by, 1767—E
COMMITMENT to psychopathic hospital as related to question of personal liberty, [Dewey] *292
COMMUNICABLE DISEASES: See Contagious Diseases
COMPLEMENT fixation: See Serodiagnosis
  preservation of, by sodium acetate, [Rhamy] *2000
COMPOUND SYRUP OF HYPOPHOSPHITES, Army Medical Department bids on 3 tons of, 783—E
CONDYLOMA of bladder, [Baker] *442
CONJUNCTIVITIS, phlyctenular, etiology of, [Gibson] (1) 568
CONNECTICUT homeopathic examination, 875
  medical news, 635, 861, 939, 1175, 1550
  state board homeopathic report, 1789
  state board March examination, 1564
  state board November examination, 187
CONSTIPATION: See also Intestine, Stasis
CONSTIPATION, habitual, [Thaysen] (98) 1988
  habitual, in infants, [Dorlencourt] (56) 1040
CONSUMPTION: See Tuberculosis, Pulmonary
CONTAGIOUS DISEASE, acute, in French army, [Rist] (1) 415
  and fatigue among sailors, 1179
  attendants, face mask for, [Dannenberg] *990
  control of, 1361—ab
  face mask in control of, [Capps] *910
  in Cuba, 1875
  prophylaxis of, [Waller] (96) 497
CONTRACTURE after tetanus, treatment of, [Bérard & Lumière] (50) 131
  and paralysis of feet, [Roussy & others] (28) 1337
  deformity of hand or foot from, treatment of, [Boisseau & d'Oelsnitz] (28) 1402
  functional paralysis and, [Claude & Lhermitte] (48) 738
  ischemic, treatment of, [Luzoir] (35) 1125
  of elbow, treatment of, [Abrahamsen] (123) 968
  of hand, [Dumas] (53) 963
  of hands, hysteria as element in, [Boisseau & d'Oelsnitz] (53) 576
  psychoneurotic, of foot or hand, [Roussy] (27) 890
  war, microsphygmia with, [d'Oelsnitz & Boisseau] (60) 815
CONTRELL'S Magic Troche, 718—P
CONVALESCENCE, circulatory reactions to exercise during, from infectious disease, [Mann] (27) 1891
CONVULSIONS, blood pressure in relation to, [Ervin] *1208
COPROLOGY and chronic enteritis, [Goiffon] (30) 2057
CORN (maize) as *human food*, use of, [Sherman] *1579
  in war time dietary, 1865—E
CORNEA, anesthesia of, [Sollmann] (87) 887
  graft of, [Bonnefon] (52) 575
  opacity of, [Fernandez] (74) 740
  syphilis of, [Cosmettatos] (119) 1199
CORNU ammonis, histology of, [Ochoterena] (83) 134
CORONARY lesions, 3 cases illustrating consequences of, [Woolley] (496) 56
  thrombosis in relation to angina, [Herrick] 1030—ab
CORPORA CAVERNOSA, gummas in, [Clark] (82) 134
CORPUS LUTEUM extract in exophthalmic goiter, [Hoppe] (62) 1569
CORTEZO elected to Spanish Academy, 713
COST of living and adequate nutrition, 1600—E
COTARNIN hydrochlorid, 1396, 1883
  local hemostatic properties of, and other agents, [Hanzlik] (51) 732
COTTONSEED flour as food, possibilities of, 1228—E
COUGH drops and troches, sale of, 1784
  reflex, from foreign body in ear, [de la Cruz Correa] (99) 65
COUNCIL OF NATIONAL DEFENSE, meeting of General Medical Board, 239
  work accomplished by Advisory Commission of, [Martin] 565—ab
COUNTRY boys not physically superior to city boys, 97
COXA VARA and obesity, [Kirmisson] (25) 1265
CRANIUM: See Skull
CREATIN and creatinin in blood, 780—E
  placental transmission of creatinin and, [Hunter & Campbell] (30) 1567
CREATININ and creatin in blood, 780—E
  content of blood, [Tchertkoff] (64) 494
  placental transmission of creatin and, [Hunter & Campbell] (30) 1567
CREATINURIA, [Sedgwick] 720—C
CREMATION, 1970—ab
  Society, report of, 402—ab
CREOSOTE for keloid, [Lesieur] (43) 737
  oil, *coal-tar*, in checking of putrefaction and repelling flies, 1005—E
CRESOL, 1227
  for destruction of nits of clothes louse, [Bacot & Lloyd] (20) 1895
CRIMINAL responsibility, [de Castro] (102) 1641
CRIPPLED Soldiers: See Soldiers
CROSS of Legion of Honor for *military nurses*, 1877
CRUTCH, rolling, [Hall] *666
CRYSTAL violet and brilliant green, sterilization of skin and other surfaces by mixture of, [Bonney & Browning] (5) 2036
CUBA letter, 555, 865, 1246, 1875
  national medical congress in, 110
  physicians and nurses of, to front, 1875
  public health *efforts* in, 1783
  reorganizing Army Medical Corps in, 555
  shortage of foodstuffs in, 555
  to send medical unit, 1307
  vital statistics in, [Fosalba] (103) 819
CUBANS, blood picture in, [Plasencia] (111) 1045
CULTURE mediums, bacteriologic, colorimetric determination of reaction of, [Barnett & Chapman] *1062
CUNEIFORM BONE, middle, dislocation of, [Warner] *83
CURE, THE, new publication of Camp Upton Base Hospital, 1950
CYANID in therapy, 892—E
CYST, blood, in kidneys, [del Valle] (94) 966
  Echinococcus: See Echinococcosis
  in thyroid, following bullet wound, [Baller] (69) 83
  parovarian, giant, [Pages] (102) 1198
CYSTIC DUCT, fate of, after cholecystectomy, [Eisendrath & Dunlavy] (146) 119, 265—ab
CYSTOCELE and uterine prolapse during child-bearing period, treatment of, [Watkins] (120) 1636
  operation for, [Dawls] (2) 1118

D

DAKIN'S DICHLORAMIN-T SOLUTION: See also Carrel and Dakin Solution
DAKIN'S dichloramin-T solution in ocular infection, [Green & Green] *1212
  dichloramin-T solution in wounds, [Sweet & Hodge] *605
  sodium hypochlorite solution, prevention of blood clotting by, [Githens & Meltzer] 1115—C
  solution (neutral solution of chlorinated soda), in normal peritoneal cavity, [Mann & Crumley] *840
DAMAGES for "blues," 879—Ml
  for eviction or trespass, physician entitled to, 1972—Ml
  liability for, from criminal operation, 493—Ml
DASHEEN as food, 461—E
DAVIS, Raymond Neel, distinguished service award to, 1111
DAYLIGHT saving, 627—E, 874
DEAF-MUTES in Switzerland, [Siebenmann] (57) 739
  sound perception in, [Wright] 49—C
DEAFNESS, classification of, for recruiting officer, [Escat] (38) 131
  in schoolchildren, [Schlittler] (76) 1012
  pretended, detection of, [Norlund] (121) 968, [Brownfield] *597
  pretended, detection of, by auditory dilatation of pupil, [Van Ravenswaaij] (124) 1199
  [illegible] pretended,
  war, [illegible], report of tests on preventives, [Guild] (79) 1121
  war, *report of tests on 8 preventives*, [Guild] (81) 418
DEATH, cause of, 461—E
  date of, and crystals in blood, [Valverde] (84) 1576
  prevention of, 512—E
  rate and causes at Copenhagen, 1715, [Helberg] (134) 1643
  rate in Russia, [Binshtok] (106) 741
  signs of, 1964
  tear sign of actual, [de Toledo] (97) 1197
DEFECTIVES: See Feeble-mindedness
DEFONTAINE, death of, 1022
DEGENERACY: See Feeble-mindedness
DEGENERATES, wanderlust in, [Helweg] (131) 1272
DEHYDRATED vegetables, [Givens] *1743, 1766—E
DEIMLING, Delia, healer, 870—P
DELANGLADE, Edouard, death of, 111
  souvenir medal, 1245
DELAWARE medical news, 939, 1550
  state board December examination, 260
DELINQUENTS, juvenile, 388—E
  juvenile, physical status of, based on physical and clinical examinations of children in reformatories of city of New Orleans, [Bass & Loeber] (107) 1894
DELIRIUM TREMENS, treatment by spinal puncture, stimulation and use of alkali agents, [Hoppe] (80) 886
DELIVERY: See Labor
DEMENTIA PRAECOX, [Lafora] (94) 741
  eye in, [Teal] (13) 1188
  numbers of histidin decarboxylating organisms in feces in, compared with numbers in normal feces, [Jones] (35) 570
DE MUTH, Hulda, healer, 870—P
DENOIX, Arnaud, death of, 405
DENTICLES, removal of 30 from *one* bicuspid socket, [Allen] *1224
DERMATITIS from safety matches, [Rasch] (114) 1344, [Barfoed & *others*] (111) 1510, [*Christiansen*] (118) 1804
  in sorghum cutters, [Hoffer] (71) 1801
DERMATOLOGIST, duties of, [Hazen] *1989
DERMOID cysts, traumatic, [Van den Helm] (125) 1642
DERWILLO, 1024—P
DETRE Differential Test, 1227
DEXTROCARDIA, [Clerc & Bobrie] (27) 1982
DEXTROSE, blood, as affected by morphin and morphin with ether anesthesia, [Ross] (49) 1978
DIABETES insipidus and pituitary, [Lereboullet] (74) 1268
  insipidus, control of polyuria in, by means of hypophysial extract, [Rosenbloom] *1292
  insipidus in syphilitic, [Heden] (123) 66
DIABETES MELLITUS, blood sugar in, effect of diet on, [Mosenthal & others] (27) 343
  comparative food value of protein, fat and alcohol in, as measured by nitrogen equilibrium, [Mosenthal] 1887—ab
  dehydratation in, [Chauffard & others] (30) 1338
  etiology of, [Williamson] (7) 959
  glycosuria in, during intercurrent disease, [Cottin & Saloz] (27) 736
DIABETES MELLITUS, maintenance diet in, 1300—E
  of 15 years or more duration, study of 62 cases, [Hornor & Joslin] (6) 267
  psychoses associated with, [Singer & Clark] (85) 418
  starvation treatment of, [San Martin] (89) 966
  sugar content in, significance of, 541—E
  syphilis as cause of; relation of Wassermann test and lipoidemia, [Williams] *365
  treatment of, from general practitioner's standpoint, [Janney] *1282
  urine in, and relation of urinary acetone bodies to ammonia excretion, [Richards] (91) 1894
DIABETIC foods, analysis of, [Sarraca] (91) 818
DIAPHRAGM, adhesions between pericardium and, [Trémolières & Caussade] (61) 1574
DIARRHEA, bacillary, [Ghiron] (77) 1640
  chronic, [Mathieu & Delort] (26) 814
  classification and treatment of, in infancy, [Morse] (120) 1122
DIATAXIA cerebralis infantilis, ataxic type of cerebral birth palsy, [Hunt] (2) 1498
DIATHERMY, endo-urethral, [Roucayrol] (36) 421
DIAZO reaction and oxaluria, [Phocas] (86) 1129
  reaction in tuberculous children, 50
DICALCIUM phosphate, availability of, when present as constituent of infants' food, [Bowditch & Bosworth] (30) 126
DICHLORAMIN-T, 91, [Dunham] (85) 571, 999, 1788, 1882
  Dakin's, in wounds, [Sweet & Hodge] *605
  in infections and infected wounds, [Lee & Furness] (5) 568, (86) 571
DIET: See also Nutrition and under names of diseases
DIET, effect of, on reproduction, 2011—ab
  of negro mother in New York City, [Hess & Unger] *900
  reforms, wartime attitudes toward, 926—E
  relations between dietetics and urology, [Lematte] (76) 1268
  sanatorium, monotony of, [Wilson] 238—C
  war time, difficulties of, 2028—E
DIGEST of Comments on Pharmacopoeia of the United States of America and on the National Formulary, compilation of, 183
DIGESTIVE TRACT: See Gastro-Intestinal Tract
DIGITALIS and control of auricular fibrillation and auricular flutter, with electrocardiograms illustrating effect, [Halsey] (17) 1033
  and pulsus alternans, [Carpentier] (34) 1571
  in auricular fibrillation, [Cushny] (49) 1261
  quantitative study of effect of, on heart, [*Robinson & Wilson*] (49) 732
DIONOL, 257—P
DIPHTHERIA, acidosis in, [Peters] (7) 490
  among troops, [Labit] (37) 656
  and diphtheroid bacilli, [Kling & Ljungdahl] (131) 66
  Antitoxin, Concentrated, 1159
  antitoxin, dosage of, [Comby] (53) 892
  bacilli, differentiation of, [Costa & others] (39) 198
  bacilli, effect of freezing on typhoid bacilli and, 953
  bacilli, elimination of, in urine, [Wildhagen] (92) 354
  bacilli, short, [Nobécourt] (40) 198
  carriers, tonsillectomy in, [Ballantyne & Cornell] (9) 59
  face mask and other measures in prevention of, values of, [Weaver] *76, 96—E
  from epidemiologic standpoint, [Holst] (130) 1200
  in gassed, [Ravaut & Rénlac] (40) 891
  primary, of skin and genitals, [Mondolfo] (86) 1043
  return cases of, 1534—ab
  Schick reaction in recruits for National Army, interpretation of, [Zingher] *227
  serum, date announced, 1116

DIPHTHERIA, toxin-antitoxin injections in immunization after 3 years, practical value of, [Park] 1886—ab
  toxin, forced diuresis in experimental poisoning with, [Sansum] *904
DIPHTHEROIDS and diphtheria bacilli, [Kling & Ljungdahl] (131) 66
  and female sterility, [Stellwagen & Pelouze] *977
DISEASE conditions among troops in United States, 34, 98, 170, 239, 395, 466, 544, 630, 700, 786, 853, 931, 1007, 1101, 1168, 1235, 1307, 1472, 1513, 1608, 1772, 1868, 1951
  defining, 392—ab
  incidence among troops in United States, 240
  knowledge of nature and duration of, is privileged, 1117—Ml
  prohibiting public gatherings to prevent spread of, 726—Ml
DISINFECTANT: See also Antiseptics; Sterilization
DISTEMPER, animal, and poliomyelitis, comparative study of, [Bristol] (55) 810
DISTRICT OF COLUMBIA April examination, 1564
  January examination, 1185
  medical news, 250, 1316, 1388, 1479, 1550
  October examination, 121
DIURESIS, effect of, on general blood pressure in animals with constriction of renal arteries, [Bridgman & Hirose] (31) 1033
  forced, in experimental poisoning with diphtheria toxin, [Sansum] *904
DIVINING rod in medicine, [van Rijnberk] (91) 895
DOCTOR'S Essential Foods Company, 407—P
DOGS trained as guides for blind, 1875
DOWLING, Michael, film on, 2014
DRAFT, medical problems connected with, from standpoint of appeal board, [Harris] 806—ab
  medical problems connected with, from standpoint of ophthalmologist, [Wilder] 805—ab
DRESS, relation of, to health, with reference to army uniforms, [James] (58) 1400
DRESSINGS, chassis, [Chalier & Benoist] (64) 578
  greased tulle for, [Descour] (42) 131
  hot, combined with gutta percha, 112
  hot film, rubber in, [Bouet-Henry] (15) 348
  paraffin paper as, [Harpster] *1763
  reclaiming, 594—ab
  that do not touch the wound, 476
DREYER method of agglutination used at Army Medical School, [Fennell] *590
DRIED vegetables, consideration of their nitrogen and calcium content, [Givens] *1743, 1766—E
DROPSY, epidemic, [Leporini] (48) 1126
DRUGGIST: See Pharmacist
DRUGLESS healing included in term "practice of medicine," 1767—E
DRUGS, absorption of poisons and, through vagina, [Macht] (50) 732
  absorption of, through unusual surfaces, 1232—E
  addiction, military, industrial and public health features of, [Stokes] *766
  addicts in United States, census of, 1390
  adulteration of, 1875
  habit-forming, medicolegal decision on prescribing of narcotics, 1027
  history of, [Dominguez] (115) 1642
  synthetic, [Stieglitz] *536, *688, *923
DUNFERMLINE scale, 1563
VON DUNGERN'S indigo test for syphilis, [Fujimoto] (45) 731
DUODENAL alimentation, [Pagos & Ibañez] (93) 1576, (104) 1641
DUODENIN, 115—P
DUODENUM, arteriomesenteric obstruction of, [Romme] (52) 892
  contents, estimation of urobilin and urobilinogen in, [Giffin & others] (8) 1498
  dilatation of, [Leza] (96) 1342
  fistula of, [Palmer] *595
DUODENUM, fistula of ureter and, of spontaneous origin, [Davis] *376
  pain in active pathologic processes in stomach or, [Carlson] (10) 124, [Hardt] *837, 849—E
  perforation of stomach and, new diagnostic sign, [Field] (23) 730
  ulcer of, experimental study of, [Jona] (20) 1337
  ulcer of, ruptured, 2 cases, [Roberts] (38) 1193
  ulcer of stomach and, chronic, surgical treatment of, [Sanders] 1330—ab
  ulcer of stomach and, results from combined medical and surgical treatment, [Richards] (105) 57
  ulcer of stomach and, syphilis in etiology of, [Castex] (90) 134, (66) 352
  ulcer of, value of pyloric exclusion in, [Lewisohn] (14) 1890
  ulcer with fistula later, [Mathieu & Alivisatos] (25) 814
DUST hazard of certain industries, [Miller & Smyth] *599
  in lungs, 526—ab
DWYER, John G., convicted by courts martial, 317
DYER bill: See Owen and Dyer bills
DYSENTERY, amebic, [Salom] (84) 496, [Calame] (56) 1267
  amebic abscess and, pathologic histology of, [Dessy & Marotta] (65) 352
  amebic, emetin and bismuth iodid in, [Lambert] (8) 734
  amebic, emetin in, [Barlaro & Parodi] (78) 424
  amebic, masked, [Decrop] (56) 1339
  amebic, therapeutics of, [Dale & Dobell] (86) 194, 1536—E
  amebic, treatment of, [Bayma] (70) 1985
  bacillary, acute, [Dufourt & Devic] (44) 493
  bacilli, differentiation of true, from allied species, [Andrewes] (10) 1796
  bacilli, recovering of, from stools according to time elapsing since onset of disease, [Martin & Williams] (3) 1795
  lipovaccine, triple, [Whitmore & Fennell] *902
  recent works on, [Savignac] (29) 736
  tropical, in Spain, [Martinez] (23) 814
DYSMENORRHEA new operation for sterility and, [Frank] *985
DYSPEPSIA, atonic, [Mallory] *1442
  chronic, in soldiers, [Péhu & Daguet] (27) 1337
  from perigastritis, [Araya] (87) 1406
  of repatriated war prisoners, [Ramond & Petit] (33) 1798
DYSTOCIA, annular, and pituitary extract, [Colistro & Platero] (86) 894
DYSTROPHIA adiposogenitalis, [Madigan & Moore] *669
  combined with loss of vesical control, [McKendree] (101) 1501
  muscular, progressive, [McCrudden] *1216, 1376—E
  myopathic, and paralysis agitans in uncle and nephew with internal glandular dyscrasia in latter. [Osnato] (17) 486
  traumatic-emotional, [Pighini] (51) 1126

DEATHS

Abrams, Edward Thomas, 1785
Adams, Edwin Boardman, 184
Adler, Isaac, 1555
Adsit, Joseph Sherman, 1485
Agricola, William Aaron Gibson, 1623
Ainey, Albert Joseph, 869
Albright, John Calvin, 406
Aldrich, Emma L. Scholz, 114
Alexander, Benjamin J., 1785
Alexander, Brig.-Gen. Charles Tripler, U. S. A., 948
Alexander, William S., 113
Alfred, Richard H., 1393
Allaben, Charles Smith, 113
Allemand, César, 714
Allen, John Quincy, 336
Allen, Samuel D., 1556
Allison, Clarence Samuel, 798
Anderson, Elizabeth Garrett, 43, 333
Anderson, Fletcher F., 870
Anderson, Frederick Eugene, 115
Anderson, Gilbert Emanuel, 2047
Anderson, Peter, 557
Andrews, Thomas Hollingsworth, 1555
Angeier, Prof. O. V., 1180
Annabel, Charles E., 114
Aoyama, Tanemichi, 110
Anshutz, Edward Pollock, 557
Applegate, Elmore T., 1557
Arnett, Lieut. John Deming, M. R. C., U. S. A., 1484, 1555
Arnold, William M., 336
Ashburn, James Edward, 798
Asper, Lieut. Burt Jacob, M. R. C., U. S. A., 1392
Atkinson, Robert Chilton, 184
Atwood, Adelbert Dalton, 1556
Austin, David Penfield, 1023
Auter, Milton H., 556
Avery, John Plutarch, 1393
Ayvazian, Antranig, 717
Baalith, George R., 1556
Babcock, Lyman F., 1878
Back, Joseph J., 2047
Backus, Squire George, 115
Badeau, Charles Wingate, 478
Bailey, Charlotte Kent, 1485
Bailey, Edwin Huntington, 1323
Bailey, Millard F., 798
Baker, Anthony George, 716
Baker, Charles E., 478
Baker, Milan Daniel, 1622
Baker, Capt. Samuel Chandler, M. R. C., U. S. A., 1023, 1112
Bakke, Peter, 870
Balabanoff, Margaret Carsley, 114
Balch, William Vestus, 2046
Ball, Seymour E., 1878
Banbury, Reginald Mortimer Hutchings, 477
Baptie, George, 1322
Barber, Pliny W., 717
Bardwell, Frank Judson, 1484
Baréty, Alexander, 1111
Barfield, Arthur Z., 1622
Barnes, Henry L., 1485
Barr, David Miller, 1878
Bartlett, Jeremiah Crisp, 47
Bartlett, Walter R., 557
Bartley, James Piner, 1785
Bartley, Michael Andrew, 406
Barton, Elmer E., 1484
Barton, Y. P., 869
Bass, Selvy Andrey, 1323
Bast, Oscar August, 1113
Batson, John Richard, 256
Bayliss, Edward B., 407
Beach, Lieut. Mark, M. R. C., U. S. A., 1113
Beale, Norman Leslie, 1323
Bechtol, Charles Orville, 1484
Beck, John Edward, 115
Becker, Allen B., 948
Bell, Major John Hastings, M. R. C., U. S. A., 1556
Bellinger, Lieut. Ivan Ellsworth, M. R. C., U. S. A., 478
Belt, Lloyd Jones, 1322
Belville, Frank, 256
Bemis, James Newell, 114
Benham, Charles More, 407
Benjamin, F. W., 114
Bennett, Francis Gurney, 478
Bennett, John, 1878
Bennett, John Hillman, 1965
Benson, Homer Fremont, 256
Benson, James Cook, 1966
Bermann, Isidor Samuel Leopold, 1323
Berntheisel, George W., 1878
Berwick, James Roderich, 2047
Besemer, Howard Burhans, 641
Betz, Israel H., 256
Bevan, Charles Frederick, 113
Bickford, Lydia A., 948
Biddle, Thomas Coke, 641
Bidgood, Vincent C., 717
Bilderback, Francis, 869
Bilisoly, Liser Augustus, 336
Binckley, Joseph W., 1966
Bingham, Harry Varley, 869
Binnie, John, 798
Bishop, Elijah Tracy, 948
Bishop, Eugene M., 1622
Black, Jesse Langtry, 1623
Black, Robert J., 1485
Blackford, Robert Alexander, 1322
Blake, John George, 868
Blanchard, Robert Newland, 477
Blarez, P. M. C., 1320
Blighton, W. Van R., 115
Bliss, George W., 1556
Blossom, Aimé Moors, 184
Blume, Frederick, 1484
Bobrick, Lieut. Abraham Lewis M. R. C., U. S. A., 1322
Bombin, M. S., 1180
Bonnette, Joseph A., 1024
Booth, John S., 798
Boppart, Adolph, 1786
Bosworth, John Williams, 1485
Boughton, Charles Wheeler, 255
Bowen, A. R., 1323
Bowen, Seabury, 868
Bowers, Horace S., 1622
Boyce, Benjamin Gordon, 336
Boyd, Dudley Thomas, 948
Boykin, Edward Mortimer, 1323
Boynton, Henry W., 1323
Bozzi, E., 714
Brabb, Alice A., 256
Bracy, Edward Bolliver, 184
Bradfield, John W., 336
Bradley, Charles Seymour, 948
Bradley, Capt. Clarence Davis, M.R.C., U. S. A., 552, 556, 869
Braman, Jesse, 1966
Brand, Lieut. George Jackson, M. R. C., U. S. A., 1023
Brandom, Harry J., 1878
Brandon, Thomas Alexander, 1556
Branson, Elijah, 256
Braunstein, Joseph, 47
Brock, James R., 115
Brooke, Firmen C., 1393
Brooks, George Frederick, 1484
Bresius, William Lewis, 1556
Broun, George F., 1485
Brown, Alexander Cameron, 556
Brown, Andrew Allen, 1557
Brown, J. Oscar, 336
Brown, John A., 1557
Brown, Orestes Morton, 1622
Brown, Richard Hunt, 868
Brown, Samuel Augustine, 556
Brown, Wilfrid Warpool, 556
Brubaker, George F., 1393
Brubaker, Granville Moody, 1023
Bruce, William Thomas, 1966
Bryson, Rachel Anna, 407
Buchanan, Joseph Hervy, 1966
Buck, Emory Valentine, 94
Buckley, James Edward, 1250
Buckman, Benjamin, Jr., 184
Buell, William Eugene, 1112
Bunnell, William O., 1556
Burd, Lewis C., 115
Burdick, Frank E., 114
Burge, Albertus Joseph, 477
Burket, Albert Homer, 717
Burley, Charles Henry, 256
Burnham, George, 556
Burns, Matilda Watson, 256
Burnside, Samuel Hiatt, 1878
Burrow, John H., 948
Burton, Charles Newell, 477
Butcher, Lieut. Alexander Cooke, M. R. C., U. S. A., 717
Butler, Frank Post, 642
Butler, Lieut. Chas. Francis, M.R.C., U. S. A., 2047
Butts, Judson A., 1485
Cain, Charles Masters, 948
Cain, Clark Leon, 1484
Caldwell, Edward James, 1113
Caldwell, Major Eugene Wilson, M. R. C., U. S. A., 2046
Cameron, J. S., 714
Camp, Charles D., 256
Campbell, Archibald, 1556
Campbell, Truman C., 1623
Canedy, Ransford De Los, 948
Capron, Eliab W., 1623
Carleton, Charles Greenleaf, 46
Carleton, William Hall, 1786
Carmichael, John W., 1556
Caron, William G., 1485
Carpenter, Paul D., 1966
Carroll, Lieut. Ellsworth Josiah, M. R. C., U. S. A., 556
Carroll, Thomas A., 47
Carter, William Chauncey, 642
Cartwright, Charles Ogden, 1555
Cartwright, John Parker, 1786
Cassidy, Patrick J., 557
Castilla, R. R., 1180
Castle, Charles Henry, 406
Cates, Samuel R., 113
Catlin, Herbert William, 336
Catlin, Milton M., 1323
Cavert, Albert J., 1786
Cazier, Marion Howard, 948, 1182
Chaffee, Harry Smith, 336
Chaffee, Walter D., 1878
Chaloner, Clarence A., 1182
Chaloupka, Dale Otto, 407
Chamberlain, Nelson Hoyt, 477
Chancey, Marion G., 336
Chaney, George C., 717
Chapin, John Bassett, 335
Chapman, Henry Normanton, 1555
Chase, Elmore Y., 114
Chase, John, 1556
Childers, Robert A., 642
Choate, James J., 1966
Christian, Dodson, 336
Christy, Samuel Kennedy, 1785
Clair, Capt. Frederick David, M. R. C., U. S. A., 1785
Clark, Edwin Parsons, 1485
Clark, Homer L., 868
Clark, William Summer, 2046
Clarke, Francis Moore, 641
Clarke, J. M., 1618
Clason, Jesse A., 1323
Claunch, James R., 1623
Cleborne, A. A., Surg. Alan B., U. S. P. H. S., 1622
Cleveland, James T., 256
Cleveland, John Fred, 1484
Clifford, Raymond Alfred, 798
Cobb, Willie Estes, 1785

Coleman, J. Davis, 115
Collom, Daniel Liberty, 1556
Colville, George Kent, 1556
Conklin, Justus R., 1182
Conn, James Emmett, 798
Conner, Annie Louisa, 477
Cook, Charles Perkins, 2046
Cooke, Theodore E., 256
Coombs, Lieut. Wyvern Almon, M. C., Me. N. G., 1878
Copeland, Horatio Franklin, 948
Costolo, John Walter, 947
Cowan, Major Thomas Connally, C. A. M. C., 1555
Cowperthwaite, Edwin G., 2047
Cox, Albert Jeffrey, 947
Craig, James H., 1392
Craig, John Martin, 557
Craig, William David, 717
Cranston, Ernest Albert, 184
Creasy, William F., 1785
Creveling, Joseph P., 1182
Cristman, Ezra G., 406
Cronyn, Col. William Jerome, M. C., Wis. N. G., 716
Crosby, George W., 642
Crothers, Thomas Davison, 183
Crowell, Thornton P., 477
Crutcher, Foster Bradley, 642
Cunliffe, Robert A., 184
Curlin, Prather Buchanan, 1623
Curtis, John Elmore, 1557
Cutts, Harry Madison, 716
Daly, Walter S., 1182
Dansereau, Pierre E., 798
Darby, John Eaton, 183
Darling, Lacy Bebee, 797
Davies, David Charles, 1622
Davies, Howell Cobb, 2047
Davies, James C., 1023
Davis, Frederick A., 407
Davis, Isaac Howard, 717
Davis, Robert Milliken, 1786
Dawson, William Joseph Gremley, 868
Day, William Chilton, 556
Deaton, U. Sim Grant, 1965
De Ambris, E., 639
Dean, Edwin Robinson, 641
Dean, Neal Baker, 2047
Deem, Thomas J., 1323
Defontaine, Dr., 1022
Delanglade, Edouard, 111
Demarest, Sylvester, 1622
Denney, Capt. Malcolm J., M. R. C., U. S. A., 1250
Denoix, Arnaud, 405
De Roaldes, Arthur Washington, 1965
Detweiler, John Fretts, 1623
Devine, Robert Hamilton, 1623
DeWitt, Edmund, 115
DeWitt, John H., 1323
Dice, Seth Delmar, 1965
Dickson, Chalmers McCall, 798
Diehl, Conrad, 716
Dillman, Lurton D., 477
Dixon, Samuel Gibson, 640
Dods, George D. B., 256
Dollahan; Martin Leland, 47
Dorval, Alphonso C., 115
Dossmann, Raoul S., 1878
Doty, Elmer A., 948
Dougherty, Edward Stanislaus, 948
Dow, Phineas Kimble, 115
Downs, Eli M., 1557
Doyle, Joseph Francis, 1023
Drake, William G., 1622
Driver, Stephen William, 1785
Dryer, Dwight Welcome, 1484
Ducrocq, Henri Louis, 256
Duhamel, Major Henri Masson, C. E. F., 556
Duggan, Solon Snethen, 1623
DuMars, Rufus A., 641
Dunbar, William Pitt, 1878
Duncan, Jefferson Davis, 114
Duncan, John Wesley, 947
Dunn, William Aloysius, 1112
Durkee, John, 114
Dykes, Frederick William, 798
Earle, Benjamin Prince, 1556
Eckard, Elmer M., 1392
Edmonds, Oscar W., 798
Edwards, Hugh Jones, 47
Eisenhart, Harry Picking, 184
Elder, J. Marshall, 947
Eldridge, Jesse C., 870
Elliott, Albert Jeremiah, 1965
Elliott, Noah, 870
Ellis, Edward Dyer, 478
Ellison, Saram R., 1113
Ellison, William Thomas, 1485
Elliston, G., 1618
Embry, Gideon A., 1484
Emerson, Harley Howard, 477
Enochs, Maze A. L., 1182
Ensey, William Webster, 641
Ensign; William O., 1555
Erlandsen, A. W. E., 795
Essick, Howard Malcolm, 335
Eubanks, James Beauregard, 1024
Eustace, Arthur Barrett, 717
Evans, John M., 255
Evans, Joseph J., 1785
Evans, Julian Howard, 478
Ewing, Major Charles B., M. C., U. S. A., 1023
Ewing, William Alexander, 1392
Eynon, William Gwain, 1023
Fackenthal, Howard, 870
Fairchild, Merritt Byron, 1785
Farnum, Mary L., 256
Farr, Edwin Lawson, 406
Faughnan, P. Joseph, 557
Fay, David C., 1557
Fay John W., 406
Fazzi, V., 639
Ferebee, Capt. Nelson Macpherson, U. S. Navy, 184
Ferguson, Napoleon B., 406
Fernald, Thomas B., 1250
Fernandez, Jose Florene de F., 478
Ferrell, Lieut. Hubert, M. R. C., U. S. A., 1023
Ferro, Giuseppe, 870
Fielding, James, 557
Figueroa, J. S. de, 1180
Filomusi-Guelfi, G., 1111
Finley, Theodore Gawn, 47
Fischer, Gustav A., 478
Fishburn, Benjamin B., 1878
Fisher, Albert Le Roy, 1484
Fisher, Capt. Arthur M., R.A.M.C., 114
Fisher, Julius Royal, 114
Flanagan, Leo Joseph, 2046
Fleischner, Henry, 335
Fleming, Albert W., 477
Fleming, Martin Joseph, 1622
Fleming, Mary P. Meyer, 478
Flint, Eli Percival, 869
Flower, Wallace R., 1623
Flucks, Carl, 948
Flynn, John Joseph, 255
Folsom, Edward Channing, 1786
Forlanini, Carlo, 1875
Forsythe, Wylie Hamilton, 1622
Foster, Gabriel F., 1966
Foster, Lieut. Robert Ellis, M. R. C., U. S. A., 336
Foster, George Winfield, 1965
Fox, Harvey Newton, 869
Frank, Louis Frederick, 1623
Fraser, Alexander C., 948
Frazier, Lieut. Francis Virgil, M. R. C., U. S. A., 1322
Frazier, J. Edwin, 1393
Frederiel, O., 114
Freeman, John Andrew, 1556
Friedman, Jacob, 1322
Frissell, Charles Mason, 797
Fryer, Olin J., 1023
Fudge, Joseph Granville, 256
Fullerton, Henry F., 717
Furbee, Gilbert Daniel, 1623
Fyfe, George Davis, 144
Gaar, J. Albert, 1182
Gaines, Charles E., 1622
Galbreath, John Alexander, 1484
Gallison, Ambrose John, 641
Galloway, William L., 47
Gandolfi, G., 639
Gardner, Lieut. Frank Harris, M. R. C., U. S. A., 869
Garlick, Perley G., 1322
Garner, Jephtha D., 184
Gaston, Lieut. Perry S., M. R. C., U. S. A., 1249
Gaucher, Ernest, 639
Gee, Everett W., 1623
Gensimore, Charles W., 1023
George, Joseph B., 1323
Gerrow, Stephen W., 2047
Gibbes, William Percy, 1623
Gibbs, Linnaeus Victor, 47
Gier, Frank Mortimer, 1250
Gifford, William Henry, 870
Gildersleeve, John Robinson, 948
Giles, Richard, 478
Gill, Joseph Francis, 869
Gillmore, Capt. Robt. Tracy, M.R.C., U. S. A., 255
Gimbernat, Charles, 1024
Girdwood, Gilbert Prout, 255
Givan, George C. G., 1024
Gleason, Lieut. William Thomas, M. C., U. S. A., 947
Glidden, Charles Harvey, 1112
Godby, H. B., 1786
Goddard, Henry Edward, 1622
Goldman, Maxwell, 336
Goldsmith, William Thomas, 1878
Goodell, William Constantine, 1622
Goodhue, Walter Scott, 1485
Goodman, Celia Williams Taylor, 870
Goodrich, Asa F., 1250
Goodwin, James R., 114
Goodwin, Lieut. Ulysses Grant, M. R. C., U. S. A., 114
Gordon, John Alexander, 406
Gorsuch, William Stanley, 557
Gorter, Nathan Ryno, 1878
Gough, Charles R., 717
Granes, N., 1180
Graves, Everett Amos, 1622
Graves, William Lomax, 1392
Greanelle, William James, 797
Green, Abraham W., 47
Green, Edgar Fossin, 1392
Greenlaw, Joseph Oliver, 1623
Greenslade, James Molland, 1113
Gregg, Elijah H., 1556
Griffin, Robert Emmett, 556
Grigsby, Anna Colby Smith, 1393
Grimes, George W., 1113
Grimes, John Patrick, 947
Griswold, Edward Payson Hammond, 1182
Groetsch, Charles William, 1556
Grogan, Rufus Lafayette, 1623
Groover, James I., 407
Grow, Timothy Rose, 1556
Grubb, Capt. Albert Leslie, M. R. C., U. S. A., 1555
Guilfoyle, Thomas P., 1484
Gum, Andrew T., 256
Gump, Simon H., 1557
Gwynne, Evan Edmiston, 1966
Habold, John E. L., 256
Hackney, Evan Jeffries H., 114
Hadra, Major Frederick, M. R. C., U. S. A., 335
Hagadorn, Alexander Dunlap, 716
Hagar, John A., 948
Hagerman, John A., 717
Haight, Mortimer, 1024
Hall, Freeman, 1786
Hall, James R., 1556
Halley, George, 947
Hallock, Wallace Eugene, 1785
Hamilton, Benjamin Franklin, 870
Hamilton, William Henry, 642
Hamilton, Willis, 642
Hammond, George Washington, 717
Hammond, William Nelson, 406
Hanbidge, Lieut. Francis Findley, M. R. C., U. S. A., 477, 556
Handerson, Henry Ebenezer, 1392
Haney, Julius Tillman, 797
Hanner, James P., 947
Hansen, Carl Anthon, 114
Hardwick, Frederick Veazile, 1323
Harmon, Lieut. Claude A., M. R. C., U. S. A., 947
Harnisch, Frederich Curt, 1878
Harrigan, John, 184
Harrington, Edwin I., 716
Harris, Bernard Oscar, 1323
Harris, George Francis, 1023
Harris, John William, 2046
Harris, W. P., 870
Hartman, Samuel Brubaker, 557
Harvie, Lewis Edward, 2047
Harwood, William Edward, 47
Harwood, Capt. William Elvis, M. R. C., U. S. A., 113
Hastings, Clarence A., 642
Hatch, Royal, 184
Hathaway, Lawrence Bryant, 1557
Haven, Alfred Coles, 113
Hayman, Edward Chapman, 1786
Hayward, Walter Barrows, 948
Heading, James Glasgow, 1622
Heard, Joseph E., 1785
Hearn, William Joseph, 46
Hegeman, Thomas Bakewell, 113
Heidner, Gustav Adolph, 1555
Heim, Edward W., 716
Helmke, John Nicholas, 1484
Hemphill, William Adley, 47
Henderson, Lieut. Frederick Neel, M. R. C., U. S. A., 1249
Henderson, James E., 1484
Henley, Leonard F., 870
Hennessy, William James, 1556
Henning, Bennett Graves, 1249
Henry, James Taylor, 869
Henry, Lucius Norton, 1878
Henry, Mason Elias, 1556
Henry, William, 798
Hensley, James L., 47
Hepburn, Neil Jamieson, 1878
Hering, E., 1111
Hervey, Charles Hermon, 256
Hibbs, Irwin, 1323
Hickerson, James, 1623
Hill, George Mortimer, 717
Hill, Capt. Richard C., M. R. C., U. S. A., 1555
Hills, William Henry, 1250
Hinchman, John Henry, 1966
Hindman, David Ramsey, 797
Hirsh, Jose Lewis, 947
Hitchcock, Alexander, 1966
Hoag, William Henry, 1622
Hoge, William D., 478
Holaday, Elwood, 1966
Holcomb, Samuel D., 47
Hollingsworth, H. C., 1786
Holman, Albert, 47
Holmes, Charles, 1023
Holmes, William J. R., 407
Holmquist, Arthur Julius, 716
Hoopes, W. Homer, 797
Hopkins, Capt. Odos Arville, M. R. C., U. S. A., 641
Hopkins, Robert R., 1965
Hopkins, William Bixby, 870
Hopper, Thomas Banter, 2047
Hopson, Elmo W., 948
Horn, A. E., 336
Horner, Joseph H., 256
Howard, William Lee, 948
Howell, Archibald Alexander, 255
Howes, Clarence Linden, 948
Hoyt, Charles W., 256
Huested, Alfred Birch, 797
Hughes, James Gilbert, 1023
Hughes, Morris, 184
Hull, Bradley, 115
Hull, Elmer S., 477
Hull, George Earl, 868
Humes, James Randolph, 948
Hummer, Warren Lee, 1966
Humphrey, William H., 798
Hungerford, Lieut. Henry Edward, M. R. C., U. S. A., 641, 798
Hunter, Ripley H., 1023
Hunter, Lieut. Tony Edward, M.R.C., U. S. A., 1965
Hunter, Wallace R., 1392
Hurst, George Alfred, 1878
Hutchens, John, 870
Hutson, John A., 1623
Ilderton, William, 556
Imbriaco, P., 1180
Ingalls., James Horace, 1323
Ingals, Ephraim Fletcher, 1322
Ingles, Elsie Maude, 713
Ireland, Capt. Richard Alfred, C. A. M. C., 335
Irvin, William Ernest, 114
Irvine, William T., 642
Irwin, Thomas L., 557
Istrati, C. I., 795
Jackson, Alfred William Linden, 1623
Jackson, John Paul, 1557
Jackson, Moses Joseph, 184
Jacobs, Theodore, 641
Jacobson, Bernard Samuel, 1623
James, Eugene Harold, 477
Janeway, Theodore Caldwell, 46
Jeffrey, Homer S., 1182
Jenkins, Dyer J., 1023
Jenkins, William Selman, 1623
Jennings, William Ellery 335
Jeschinsky, Louis, 870
Jessop, Samuel A. S., 1966
Jett, Capt. Richard Lawrence, M.R.C., U. S. A., 1555
Jewett, Charles Taylor, 336
Jindra, Anton John, 717
Johnson, Grant Thomas, 717
Johnson, John W., 642
Johnson, Thomas D., 948
Johnston, Charles H., 407
Johnston, Major Jas. Chew, M. R. C., U. S. A., 1622
Jolliffe, Charles C., 1323
Jones, Benjamin F., 1024
Jones, Clinton Cullen, 255
Jones, Devotie Dennis, 642
Jones, Edgar B., 1623
Jones, Frederick Childs, 717
Jones, Frederick Perley, 1250
Jones, John Edward, 1878
Jones, Stafford Potter, 1622
Joyal, Arthur, 1557
Joyce, John Henry, 1113
Joyce, Lieut. Whitney Hotaling, M. R. C., U. S. A., 1785
Jufe, Isidor, 114
Kaplan, Paul S., 256
Karsner, Daniel, 642
Keator, Capt. Frank, M. R. C., U. S. A., 336, 477
Keeling, William Wesley, 1024
Keever, William Stewart, 556
Keith, Arthur Rubel, 948
Kelly, Charles Israel, 336
Kelly, Leonard, 870
Kelly, Luke H., 1786
Kelly, William C., 2047
Kendrick, William Scott, 716
Kennedy, Linn L., 948
Kennedy, Thomas, 1556
Kennedy, Thomas Lubbock, 115
Kennedy, William, 1785
Keogh, John William, 336
Keough, Capt. Peter L. S., M. R. C., U. S. A., 1322, 1392
Kidney, Joshua Moffit, 115
Kilgour, Peter Thompson, 1484
Kilmer, Samuel L., 113
King, Azuba Doty, 870
King, Cyrus B., 1249
King, Elbridge H., 717
King, James Buchanan, 1323
Kingsbury, Albert Dexter, 113
Klous, Harry C., 407
Kistler, James Robert, 1113
Klein, Adam Raymond, 1878
Klussman, Frederick J., 1024
Knott, Lloyd D., 1024
Kobisk, Frederick B., 1484
Kohn, Albert, 406
Krönig, B., 475
Krotoszyner, Martin, 1249
Krug, George A., 256
Kugler, George W., 1622
Kuhn, William A., 797
Ladd, Horace, 870
Lain, Rachel B., 798
Lampton, James H., 869
Lane, Allen K., 114

Langley, John William, 1785
Lanier, John Hicks, 256
Lautz, Percival, 1112
Lappeus, Andrew J., 478
Large, Adin F., 1878
Larue, Benjamin F., 1023
LaRue, Omer, 114
Latham, Ora N., 869
Lathrop, George Henry, 716
Lathrop, William Henry, 335
Lawrason, George Bradfoot, 641
Lawrence, Albert Lynch, 114
Lawrence, William M., 1024
Laws, Capt. Clement Edwin, M. R. C., U. S. A., 1484
Lee, Charles Edward, 1484
Lee, Herbert, 1023
Leet, William Clark, 557
Lepage, G., 476
Lerda, Capt. G., 475
Levings, Alfred Hamilton, 797
Lewis, Jacob Franklin, 477
Lichty, Capt. Milton Jay, M. R. C., U. S. A., 556, 716
Lilly, Thomas A., 557
Linton, Albert V., 1323
Litchfield, Paul Nathan, 1484
Little, Edgar P., 1023
Little, Samuel Boyd, 406
Litzinger, Glen Mitchell, 114
Livengood, Charles F., 1323
Livengood, Theodore F., 336
Livingston, John Hartridge, 869
Lockhart, Theron Dickey, 1113
Lohnstein, H., 1111
Lomax, Joseph Dodson, 1250
Lombard, Amasa Frank, 1623
Long, Lieut. Chas. Richard, M. R. C., U. S. A., 1966
Long, John Harper, 1965
Long, Willard Ammi, 1393
Longshore, Rebecca H. Reynolds, 1786
Loomis, Edwin Charles, 1966
Lopez, Felicisimo, 43
Lord, Herbert Aaron, 1785
Lowery. Joseph E., 717
Lowry, Albert D., 184
Lukis, C. P., 110
Luther, Capt. John Weaver, M. R. C., U. S. A., 184
Luhrsen, Ernest Frederick, 556
Lynch, Major Woods Walker, M. R. C., U. S. A., 2046
McAdam, Linus James, 1023
McAllister, William F., 1182
McAlpin, William J., 1623
McCall, W. H., 1485
McCampbell, Ernest Janes, 1485
McCandless, Alexander A. E., 1113
McCarty, John F., 1878
McCormick, Jacob Crawford, 114
McCornack, William Andrew, 798
McCoy, Columbus Epaminondas, 1113
McCrae, Lieut.-Col. John D., C. A. M. C., 316, 406
McCullough, Adam H., 1484
McCullough, Anna M. Dalrymple, 717
McCullough, Joseph Alva, 1878
McCune, William D., 1024
McCurdy, William H., 1023
McDonald, Alexander Vaughan, 798
McDonald, James H., 1623
McDonald, William Ogden, 1112
McFarland, John W., 798
McFarland, Lewis Robert, 1966
McGill, William Bacon, 1965
McGillivray, John C., 717
McGovern, Martin Augustus, 47
McGurn, William J., 1024
McIntosh, Oliver Allen, 1393
McKay, John A., 256
McKay, Read Jennings, 797
McKelvey, Van Dyck, 1323
McKenzie, Henry B., 1966
McKinney, John G., 336
McKinney, Loyd L., 798
McKinney, Robert A., 1966
McKinnie, Patrick Henry, 407
McKinnon, George Allen, 114
McKlveen, Frank Grove, 1484
McManaway, Charles Gustavus, 716
McMechan, James C., 47
McMullan, Oscar G. B., 641
McMullen, Bartlett H., 1182
McNally, William P., 1556
McNutt, William B. A., 1484
McPheeters, John Snyder, 1785
McTurnan, Michael J., 1878
MacCallum, John H., 717
MacCuish, Capt. Kenneth Angus, R. A. M. C., 114
MacFarlane, William Allan, 798
Mack, Annette S. Dobbins Richards, 256
MacKinnon, George L., 336
Macnaughton-Jones, H., 1618
Macy, William Austin, 1785
Maddux, Daniel P., 184
Maddux, Elmer Davis, 1182
Magnin, A. J., 45
Majeski, Wenzel, 717
Malatesta, R., 639
Mallet, H., 1320
Mallett, George G., 1623
Malsch, Edmund A., 557
Manser, William Henry, 1556
Manson, Dwight Timothy, 114
Martin, Archibald Yhel, 1786
Martin, Edward Homer, 184
Martin, Glover D., 336
Martin, James Thurston, 1250
Martin, John MacLeod, 717
Martin, Joseph Henry, 1786
Martin, Roger, 1622
Martyn, Charles S., 256
Marvin, John Jay, 641
Mason, James Munday, 798
Mattingly, Joseph Henry, 1966
Maudsley, Henry, 715
Maxwell, Earl Benjamin, 184
May, James Rundlet, 1556
May, Philip Pendleton, 1556
May, Vance, 1485
Mayer, Orlando Benedict, 2047
Mayfield, Stephen A., 407
Mays, Nelson, 477
Mays, Thomas Jefferson, 640
Mead, Sarah R., 1023
Meadors, John E., 1250
Mebane, William Nelson, 1023
Meek, Ethelbert Eldridge, 1966
Meeker, Lewis E., 1786
Meigs, John B., 115
Meriwether, James Addison, 1556
Merritt, John, 2047
Metcalf, Olive B., 641
Mewborn, Walter Alva, 869
Mickley, Lieut. Harold Franklin, M. R. C., U. S. A., 947
Miesse, Americus, 870
Milan, Theodore, 1785
Miles, James, 256
Mill, George, 1323
Miller, Benjamin E., 1965
Miller, Kenney N., 2047
Miller, Lieut. William Louis, M. R. C., U. S. A., 2046
Miller, Oliver Laird, 1024
Milliken, A., 1182
Mills, William F., 869
Mitchell, Charles Wellman, 46
Moeser, Ralph E., 948
Mohan, John Francis, 406
Monroe, James Albert, 256
Montgomery, Henry, 1556
Montuori, A., 1390
Mooney, Lieut. Edward Leland, Jr., M. R. C., U. S. A., 1182, 1250
Moore, Albert Mehrer, 947
Moore, Edward Mott, 1323
Moore, Lieut. Hugh Tate, M. R. C., U. S. A., 1322
Moore, Jean Isabelle Best, 1622
Moore, John T., 948
Moore, Lynn B., 1623
Moore, Pren M., 1024
Moore, Richard H., 798
Moore, Reuben Gardner, 1484
Moore, William Arthur, 1392
Moore, Robert Love, 477
Moorman, Charles T., 557
Morand, Alfred L. S., 798
Morden, Marshall Robin, 948
Morgan, Zachariah Raphael, 642
Morrill, George H., 1622
Morris, Arthur J., 1556
Morris, George Francis, 798
Morrison, Ephraim, 1623
Morrison, James Beall, 115
Mosny, E., 1618
Mott, Valentine, 2046
Mudge, Daniel W., 1623
Mullen, Isaac Todd, 1878
Mullen, James Joseph, 115
Mullen, John Henry, 798
Muller, Carl Louis, 2047
Munford, William Bratten, 1393
Murdock, Robert, 1182
Murray, Samuel Taylor, 1182
Myers, Jane V., 1393
Nagin, P. Louis, 1323
Nagle, Francis Willard, 406
Nance, Marcus Lafayette, 115
Naulteus, Francis, 1623
Nealley, George F., 335
Neff, Harry Clifton, 115
Nelson, William Winfield, 1484
Newell, Warren, 1484
Newlin, Stanley C., 1023
Newton, George Adolphus, 336
Newton, John, 1786
Newton, Leroy Allan, 716
Nichols, Henry Dodge, 1556
Nicholson, James Lloyd, 406
Nickerson, William Jabez, 947
Norman, Edward J., 717
Norris, Irving W., 870
Norstedt, Lieut. Gustaf Lewis, M. R. C., U. S. A., 1023, 1249
Northridge, Thomas Henry, 642
Noyes, James H., 1250
O'Brien, John A., 798
O'Bryan, Capt. Harry James, M. C., Minn. N. G., 1113
O'Connor, James W., 1323
O'Dea, Charles Augustus, 947
O'Donnell, James, 255
O'Donnell, Thomas Joseph, 335
Offut, Lemuel, 1113
Ogden, George R., 717
Oliver, James, 717
Osburn, Ellen M., 948
Osman, Charles Frank, 1024
Ostrander, George Augustus, 113
Overton, Orville Penny, 256
Owen, Lieut. Geo. Francis, M. R. C., U. S. A., 256
Oyen, Martin, 184
Page, Benjamin F., 407
Page, Edward, 717
Page, John Hardy, 1623
Palmer. Elton J., 948
Palmquist, Luther Titus, 868
Pansini, S., 1390
Pappenheim, A., 639
Paquin, Ozias, 1182
Pardee, Ensign Bennett, 113
Parker, Frederick Henry, 1557
Parker, Henry J., 1623
Parker, Thomas S., 1250
Parker, William Lockwood, 1966
Parsons, William, 1182
Pate, William T., 556
Paterson, Murray Hume, R. A. M. C., 556
Patterson, Thomas Jefferson, 1556
Patterson, William F., 1182
Payne, Albert Summerfield, 557
Payne, R. H., 1250
Payne, Robert Lee, 641
Peacock, J. B., 406
Pearson, John S., 256
Peck, Eugene Chase, 869
Peck, Mary Eva, 557
Pendleton, Edward T., 1785
Pepin, Joseph Raoul, 641
Perkins, Orville Juan, 1966
Perrins, John, 1786
Person, Owen Franklin, 1786
Persons, Comdr. Remus Charles, Med. Dir., U. S. N., 868
Petherbridge, Gustavus Weems, 1323
Petrone, G. A., 714, 1111, 1245
Pettit, William Beverley, 1484
Peugh, Edwin DeWitt, 642
Pfeiffer, Jens Paulus Immanuel, 1623
Pfouts, Ion Marion, 1623
Philips, William Townsend, 1623
Philipson, Sir George H., 714
Phillips, Charles S., 1556
Phillips, James Lee, 1485
Plummer, Frank Wentworth, 47
Pohek, George Ivan, 948
Polk, William Robeson, 256
Porteous, William N., 1623
Post, William Cranston, 336
Postle, Rowland A., 1555
Powell, David, 797
Powell, Jehu Z., 184
Powelson, Howard Jackson, 717
Powers, Frederick, 255
Prather, William Butler, 869
Pratt, Capt. Frank Shumway, M. R. C., U. S. A., 641
Pratt, Irene Robinson, 1623
Prindle, Charles Henry, 1024
Pringle, Cyrus E., 478
Proctor, Burton Harry, 407
Proctor, Merritt E., 1323
Pullin, Susan Ema, 642
Purkiser, William S., 1966
Quinby, Watson F., 1966
Racicot, Donat F., 2047
Radda, Jaroslav, 1966
Radeker, Barna Edmond, 477
Raines, Lieut. Thos. Hart, M. R. C., U. S. A., 1965
Ralston, Robert Graham, 2047
Ratz, Major John Henry, 1556
Rauschkolb, Charles, 256
Read, John A., 1878
Reade, Frank Marshall, 797
Reed, Henry Bidlack, 335
Reed, John W., 1323
Reily, Walter E., 1555
Reinhart, Elmer William, 870
Remington, Joseph Price, 43
Renaut, J., 405
Reno, Lieut.-Col. William W., M. C., U. S. A., 1182, 1307, 1323
Revilliod, L., 1245
Reyer, Ernest Charles, 1112
Rhea, Archibald W., 1966
Rich, Lyle Barnes, 1392
Richards, Nicholas Dennis, 1485
Richardson, Aubrey J., 1623
Richman, Edward Milton, 798
Ricketts, T. F., 714
Riddick, James G., 716
Rigg, Lindus LaRell, 641
Riordan, Harry D., 948
Rivalta, R., 1390
Roberts, John W., 948
Roberts, William W., 1786
Robinson, Marius Emmet, 1250
Robinson, William Earland, 717
Robinson, William J., 1966
Rockwell, Oscar H., 1484
Rodier, George, 642
Rodman, Andrew J., 1249
Rodman, William E., 477
Roe, Malcolm C., 256
Roehrig, George Frederick, 798
Roesch, Frederick, 948
Rohlfing, Henry, 947
Roll, James H., 1785
Ronayne, John A., 1023
Root, Edward Fifield, 336
Rose, Augustus Selle, 798
Rosenson, Leon M., 1966
Rosenwald, Lieut. John Paul, M. C., Minn. N. G., 1484
Rosser, David, 1556
Roth, Frederick Charles, 642
Rowell, George B., 478
Ruata, C., 1180
Ruch, Charles Frank, 1393
Rucker, Edwin Timothy, 1393
Rumrill, Clinton J., 256
Runeberg, J. W., 795
Rush, Surg. Lieut-Comdr. William Henry, U. S. N., 1392
Russell, Hamilton Earle, 1785
Russell, William Edward, 256
Russi, Oscar James, 1023
Rybolt, Lieut. Stephen Ballard, M. R. C., U. S. A., 255, 335
Sage, Lieut. Abner Potts Hubert, M. R. C., U. S. A., 2046
Salisbury, Francis R., 1024
Salley, Michael Gramling, 2046
Salmon, Dr., 714
Salmon, Edward Lawrence, 1024
Sanborn, Fannie W., 1182
Sanders, Addison Fitzhugh, 1555
Sanders, William Henry, 183
Sappington, Joseph B., 641
Sasseville, H. M. Nicholas, 114
Sauvage, Camille, 1245, 1321
Sawin, Charles Dexter, 557
Scattergood, Charles F., 1323
Schaeffer, Edward Martin, 47
Schellenger, Edward A. Y., 114
Schmauch, George, 184
Schneider, Dr., 111
Schneider, Jacob A., 1623
Schofield, John Calvin, 947
Schooley, Alfred Wiles, 1878
Schuman, Alanson Tucker, 1182
Schuyler, Peter Livy, 870
Scofield, Lorenzo F., 717
Scott, Lancaster F., 870
Scott, William B., 1249
Scott, William M., 642
Scribner, Ernest Varian, 2046
Searles, Frank Wesley, 1878
Seeley, William A., 642
Sellhausen, Harry A., 406
Severance, Ella Eliza, 717
Shaeffer, Uriah R., 1556
Shambaugh, Cleveland James, 2047
Sharkey, John Thomas, 47
Shattuck, Alvin, 1182
Shattuck, John, 1485
Shaul, James William, 1323
Shedd, George Horsley, 1182
Sheehan, Daniel Joseph, 716
Sheehan, Capt. Edward M., M. C., N. G., U. S., 336, 406
Shepard, John Wesley, 1557
Sherburne, Andrew Badger, 111
Sherman, Andrew T., 47
Sherrick, Chauncey, 255
Shipman, Charles G., 1392
Shipp, Milford B., 1024
Shobe, A. A., 717
Shouse, Thomas Smith, 1250
Shrader, Clinton O., 1485
Siccardi, Major P. D., 475
Siegfried, Henry David, 1622
Silva, Manuel S. da, 478
Silverman, Maurice J., 1323
Simmonds, Andrew J., 798
Simmons, John, 478
Simons, Charles Perry, 184
Simpson, John T., 407
Skinner, Edward Manning, 717
Skinner, Frederick Cecil, 1622
Slaughter, Abbott W., 1023
Small, Reuben Dunn, 1024
Smead, Carroll Cassius, 255
Smith, Everett Russell, 336
Smith, Frank Roop, 947
Smith, George Jacob, 641
Smith, H. Williams, 1393
Smith, Henry A., 556
Smith, John W., 94
Smith, Maurice, 115
Smith, Richard H., 1878
Smith, Warren Hayes, 798
Snoddy, A. N., 2047
Snodgrass, David B., 1786
Snyder, Edgar, 1485
Sohlberg, Olof, 947
Sommer, B., 1962
Southmayd, John Franklin, 947
Sparling, Wyndham Clyde, 114
Sparrow, J. P., 869
Speaker, William T., 1623
Speer, James W., 948
Speyr, E. T., 1320
Speyr, T. de, 1111
Springer, Aurelia, 1966
Stamm Martin, 1785
Stanhope, Redington, 948
Starr, V. H., 1618
Staub, Franklin Benjamin, 255

Stedman, Robert Shields, 1393
Stehman, Henry B., 556, 872
Steele, Clifford Morrogh, 114
Stellwagon, Thomas Cook, 2046
Stephan, B. H., 1245
Stern, Heinrich, 477
Stevens, John A., 1556
Stevens, Valter P., 1250
Stevenson, John R., 114
Stevenson, Silas, 948
Steward, Susan Maria Smith McKinney, 947
Stewart, Lieut.-Col. H., 1618
Stewart,
Stickel,
Stiles,
Stocktor
Stockwe 115
Stoddar 556
Stoeckl
Stone,
Storer,
Storms,
Story, Eugene C., 407
Stout, Abraham, 255
Storer, William H., 1623
Stratford, Alfred, 1393
Stratton, Robert Folger, 556
Streeter, Merton Reynolds, 1966
Stroud, Olenthus D., 557
Sturtevant, Charles Bowman, 1392
Sulzer, D. E., 1111
Summa, Hugo, 46
Summers, M. H., 1024
Sumpmann, Hubert Anton, 336
Surber, Levi H., 406
Swan, Benjamin Ralph, 477
Swift, Elisha P., 797
Swift, George Edward, 2046
Tait, Frederick Dudley, 797
Talcott, Don Leroy, 1966
Tamassio, A., 110
Tanner, Alfred Herbert, 1250
Tanner, Emeline, 1393
Tapscott, A. Byron, 642
Taylor, Augustus P., 716
Taylor, C. E., 1623
Taylor, Thomas James, 255
Taylor, William Houston, 1182
Teegarden, William, 1024
Teeter, Judson, 557
Tegtmeier, Christian F., 184
Ten Eyck, George Scribner, 1182
Thomas, Adelaide Eliza, 2047
Thomas, Frank Webster, 336
Thompson, Lieut. Alvah Roy, M. R. C., U. S. A., 336
Thompson, Charles E., 1785
Thompson, Edmund Burke, 406
Thompson, Glen, 47
Thompson, Homer Warren, 642
Thompson, Randall, 1023
Thompson, William A., 478
Thompson, William Hanna, 335
Throckmorton, William S., 1323
Throop, Homer H., 478
Thurman, Elisha J., 1182
Thurston, Eli H., 1485
Tibbals, Elbert P., 717
Tice, Harry Bower, 556
Tiffany, Flavel Benjamin, 255
Tisdale, Thomas Price, 1878
Tobin, James Henry, 1966
Toeplitz, Max, 336
Toledo, Domingo Sanchez, 1875
Torrey, Samuel William, 255
Town, William S., 2047
Townsend, Alfred M., 870
Towslee, Lillian Gertrude, 1485
Travers, Boyle, 1785
Travin, William W., 1182
Treadwell, Charles Humphrey, 1024
Tredway, Lieut. Edward Everett, M. R. C., U. S. A., 1785
Trevor, R. S., 1245
Trommald, Edward Arbo, 798
Truitt, David James Odell, 869
Tryon, John S., 948
Tull, Montrose Graham, 478
Turnbull, Major Charles Smith, M. C., N. G. Pa., 640
Turrentine, Archelaus Ernest, 1023
Twining, Sutherland Douglas, 1250
Urqhart, John Edwin, 2047
Van Duyn, Lieut. Arnold Herbert, M. R. C., U. S. A, 557
Van Doren, Silas H., 642
Van Dyke, Edith Anderson, 1392
Van Horne, James T., 407
Van Houten, Nicholas Berdan, 1878
Varney, Albert H., 335
Vibert, C., 1390
Viehe, Carl G., 1622
Vincent, John Alexander, 1556
Vinnedge, William W., 184
Viriani, L., 639
Vogt, Lieut. David Mays, M. R. C., U. S. A., 2046
Von Ruck, Silvio Henry, 1323
von Sicherer, O., 1320
Wadsworth, Daniel U., 1392
Wagner, Frederick Miner, Jr., 184
Wagner, Harrison Girard, 1182
Wagner, William Edgar, 1023
Wakefield, William, 1623
Walk, James Wilson, 406
Walker, *Augustus Chapman*, 1322
Walker, Rolandus G., 1112
Walker, W. O., 114
Wallace, William L., 1623
Walling, G., 795
Walls, *John A.*, 1623
Walsh, Charles Francis Adams, 1786
Walther, John Augustus, 1113
Walters, Reuben Wilson, 1556
Walton, Lewis P., 1323
Walton, Lucius A., 1556
Ward, Uriah Irvin, 1966
Warman, David, 716
Washabaugh, David J., 114
Waterhouse, Leonard P., 869
Waters, Guy Sumpter, 1393
Waters, Moses H., 1322
Watkins, Gabriel H., 1484
Watson, Berry Allen, 1024
Watson, Bruce, 114
Watson, Irving Allison, 1249
Watson, William Seth, 1965
Watts, Henry R., 2046
Weber, Frederick J., 1485
Webster, George H., 1024
Weems, Mason Locke, 115
Weiss, G., 475, 714
Welker, Capt. *Henry Clement*, M. R. C., U. S. A., 1555
Welsh, Millard F., 407
Wentworth, William Parish, 641
Wesselius, George W., 406
Wesson, Isaac A., 1786
Wetmore, William Harold, 1182
Weygandt, Frederick, 2047
Whaley, Thomas Prioleau, 335
Whedon, Daniel Denison, 717
Wheeler, Charles Henry, 1393
Wheeler, John A., 1393
Wheeler, Walter Sewell, 1484
Whelan, William J., 716
White, Frank Hart, 1182
White, George Amos, 947
White, George E., 1966
White, Joseph Tatum, 1622
Whiting, Marcus, 1878
Whitlock, John Thomas, 1623
Whitney, Frank Eugene, 478
Whittaker John Boice, 1393
Whitten, William Daniel, 47
Whittlesey, Granville E., 114
Whyte, Peter Duncan, 336
Wideman, James W., 1481
Wilcox, John F., 256
Wilgus, James Livingston 2046
Wilkerson, William C., 1393
Willard, Henry S., 870
William, Robert Day, 1965
Williams, Charles Herbert, 2046
Williams, Howard J., 797
Williams, George Albert, 1556
Williams, John Burt, 47
Williamson, James G., *Jr.*, 717
Williamson, Seymour C., 1878
Williamson, Walter Darwin, 1878
Wilson, Abram S., 1556
Wilson, Benjamin Franklin, 1623
Wilson, Charles Leonard, 406
Wilson, Frederick Morse 184
Wilson, Freeman E., 1623
Wilson, *Henry Allen*, 1182
Wilson, Henry Merryman, 1555
Wilson, Percy B., 1023
Wilson, Todd J., 717
Wilson, William S., 557
Winchester, Weems R., 1485
Winter, Julius Adolar, 1485
Winton, David M., 798
Witting, Anthony P., 1323
Wood, James Hardin, 1622
Woodard, Ripley Ezra, 1485
Woodruff, William H., 1484
Woods, Walter V., 114
Workman, John Calvin, 1622
Worley, Gaines, 1966
Worsham, Benjamin M., 1555
Wossidlo, A., 1320
Wright, James Horrace, 477
Wright, Luther R., 1485
Yager, *Enoch James*, 47
Yates, David Gilbert, 1555
Yost, John M., 1024
Young, John Wesley, 1623
Youngquist, Orrin Godfrey, 115
Yount, B. H., 557
Yutzy, Simen Menno, 1555
Zavala, M. G., 1875

E

EAR: See also under Special Structures of Ear
EAR, alternating irrigation of, [Alfelt] (104) 580
  foreign body in, reflex cough from, [de la Cruz Correa] (99) 65
  hematoma in, [Marie] (37) 131
  injuries and diseases in French army, [Bryant] (6) 129
  injuries in war, morbid anatomy of, [Fraser & Fraser] (1) 271
  internal, disease of, with epidemic parotitis, [Hoilskov] (102) 426
  of disease of, 62
  n children, [Dévé] (28) 1982
  of bladder, [Covisa] (85) 1987
  of liver, painful, [Chauffard] (21) 1337
  of lungs, [Corvetto] (94) 1197
  postoperative treatment of, [Parodi] *(56) 351*
ECLAMPSIA, analysis of blood in, [Slemons] (18) 1792
  cesarean section for, [San Martin] (86) 661
  conservative treatment of, [McPherson] (7) 342
  placental origin of, [Bory] (58) 893
  prophylaxis of, [Salaberry] (109) 1198
  treatment, [Edgar] *1205
ECO CIENTIFICO, new medical journal, 555
ECZEMA, causation of urticaria, angioneurotic edema and, by proteins other than those derived from food, [Walker] *897
  roentgen treatment of, [Penso] (119) 967
EDEMA, angioneurotic, eczema and urticaria, causation of, by proteins other than those derived from food, [Walker] *897
  angioneurotic, five generations of, [Crowder & Crowder] (15) 125
  congenital segmentary, [Bauza] (70) 1129
  deficiency, [Landa] (69) 423
  fluids, composition of, 464—E
  fluids, nonprotein constituents of, [Danis & Minot] (17) 125
  malignant, without gas, [Scalone] (42) 275
  neurotrophic, [Carnelli] (68) 659
  nonrenal, [Labbe & Marcorelles] (36) 1982
  pulmonary, after skull wounds, [Moutier] (52) 1339
  war, 627—E
  war, and bilateral parotid enlargement, [Park] (3) 1637
  war, (kreigsoedem), [Park] *1820
EDUCATION: See also Schools; University
EDUCATION, fifth year proposed at Columbia University School of *Medicine, 560*
  medical, and instructions in treatment, [Williams] 1790—ab
  medical, medical interns and war, [Arnold] *451, 566—ab
  medical, memorandum for Surgeon-General of United States Army on, 1930
  medical, preparatory school for, at Bordeaux, 111
  medical, recent improvements and further needs in, [Colwell] 484—ab
  of medical officers and all year medical study, [Dock] *1595
  preliminary, report on, 559
EFFUSIONS, injection of air to replace, [Weil & Loisceleur] (38) 422
EGGS, candled, spots in, [Martel] (33) 1638
  substitutes for, 1364—ab
  toxicity of, [Linossier] (44) 1573
ELBOW, *ankylosis of,* [Thévenet] (49) 575, [Ceccarelli] (75) 660
  contracture of, treatment of, [Abrahamsen] (123) 968
  joint, gunshot injuries of, treatment by early excision, [Shepherd] (13) 959
  resection of, secondary, [Leclerc] (47) 575
ELECTRIC burn causing necrosis of skull, [Lewis] (16) 955
  reeducation of muscles, [de Lisi] (57) 659
  shock, death from, 259
ELECTRICITY, death from, [Mieremet] (87) 661
ELECTROCARDIOGRAMS, influence of music on blood pressure and, [Hyde & Scalapino] (13) 1566
ELEPHANTIASIS, [Wobus & Opie] *987
  buried drainage for, [Walther] (27) 1265
EMBOLISM after mercurial treatment, [von Bassewitz] (94) 64
  fat, following trauma to bones, [Caldwell & Huber] (129) 58
  postoperative thrombosis and, suggestions for prevention of, [McCann] (1) 1193
  pulmonary, in ruptured ectopic pregnancy, [Shier] (43) 1793
EMETIN, action of, on malignant tumors, [Lewisohn] *9
  and bismuth iodid in amebic dysentery, [Lambert] (8) 734
EMETIN, hydrochlorid, effect of, on kidney, [de la Paz & Montenegro] (117) 1122
  in amebiasis, [Barlaro & Parodi] (78) 424
  in amebic liver disease, [Cros & de Teyssier] (35) 815
  toxicity of, [Guglielmetti] (51) 892
EMOTIONS and suprarenal secretion, 94—E
  somatic changes with, [Frankhauser] (79) 1196
EMOTIVE constitution, [Dupré] (36) 1638
EMPHYSEMA of lungs, [Galliard] (21) 272
EMPLOYEE, sufficient provision and notice as to medical attendance, 953—Ml
EMPLOYER, liability of, for physician not answering call, 1492—Ml
EMPYEMA and pneumonia at Camp *Zachary Taylor, [Hamburger & Mayers]* *915
  at Camp Upton, study of, [Brooks and Cecil] 1886—ab
  bed device for facilitating drainage of, [Roth] *1455
  modern treatment by antiseptics, [Stoney] (17) 959
  pleural, *otitis complicating, in* children, [Notari] (76) 578
  treatment of septic hemothorax and, [Campbell] (4) 734
ENCEPHALITIS, acute, epidemic of, 1963
  acute nonsuppurating, [Bosredon] (55) 1573
  lethargic, epidemic, 1964
ENDEMIC index, 97—ab
ENDO *medium,* stock sodium sulphite solution for, [Teague] *454
ENDOCARDITIS, acute, [Goldstein] (109) 346
  acute, and war wounds, [Karsner] 1888—ab
  gonococcic, case *of,* [*Benson*] *1524
  malignant, in children, [Morquio] *(83) 1640*
  slow, [Debré] (58) 577, [Denéchau & Picard] (44) 891, [Fayolle & Debré] (26) 1798
  slow, nervous *form of,* [Claude] (19) 1402
ENDOCRINE Glands: See Secretion, Internal, Glands of
ENDOMETRITIS, puerperal, drainage for, [Infantozzi] (111) 1642
ENGLAND, new military service bill of, and its relation to medical profession, 1381
ENTERITIS, chronic, and coprology, [Goiffon] (30) 2057
  chronic, in emeba carriers, [Mouriquand & Deglos] (30) 273
ENTEROCOCCUS complications, intracranial, of otitis, [Caliceti & Vaglio] (43) 275
  infections, [Tricoire] (42) 422
  sepsis, autogenous vaccine in, [Langeron] (38) 1265
ENTEROPTOSIS: See Gastroptosis
ENURESIS: See Urine, Incontinence of
ENZYME action, effect of potassium bromate on, [Falk & Winslow] (46) 1188
EOSINOPHILIA after resection of sciatic nerve, [Loewenthal] (63) 494
  constitutional, [Klinkert] (114) 820
  convalescence, [Klinkert] (55) 2059
  natural occurrence of, [Hadwen] (47) 1261
  pleural, [Bine] (9) 1498
EPIDIDYMITIS after meningitis, [Costa & Troisier] (45) 1040
  meningococcus, [Lancelin] (22) 272
  surgical treatment of, [Cook] *981
  with meningitis and influenza, [Beaussart] (26) 2057
EPILEPSY, pituitary gland in, [Munson] (17) 1398
  retrocursive seizures, [Mingazzini] (93) 1509
  somnambulism in hysteria and, [Bernheim] (34) 1403
  spasmophilia and intoxication as factors in, [Plantier] (59) 1800
  treatment of, [Clark] *357
EPINEPHRIN, administration of, [Millan] (59) 1041
  administration of, by intraspinal injections, in acute or subchronic cases with low blood pressure, [Auer & Meltzer] *70
  and blood flow in muscles, [Gruber] (19) 808
  and emotional states, 94—E

EPINEPHRIN content of suprarenals, medico-legal study of, [Sampaio] (44) 2058
  content of suprarenals of thyroid fed rats, [Kuriyama] (75) 417
  effect of, on action of kidney under strain, [Addis & others] (16) 1978
  effects on urine flow of anesthetized and unanesthetized dogs, [Gunning] (21) 1332
  in heart block, [Hardoy & Houssay] (54) 277
  questionable right of, to its hypothetic importance, 94—E
  regulation of urea excretion by, [Addis & others] (12) 1977
  test of functional capacity of heart, [Loeper & others] (47) 1506
EPITHELIOMA involving axilla, [Riggs] 342—ab
EQUILIBRATION, visual factors in, especially aviation, [Fridenberg] *991, [Fisher & Lewis] 1625—C
ERYTHROCYTES: See Blood Corpuscles, Red
ESOPHAGOSCOPY and tracheobronchoscopy, [Forero] (96) 65
ESOPHAGUS, cancer of, [Yamagiwa] (98) 741, [Siredey & Alevisatos] (35) 1982
  cancer of, at junction of cardia and, operative cure of, [Bircher] (65) 1640
  stenosis of, treatment of, [Sencert] (21) 1402
  stricture of, successfully dilated from below upward through gastrotomy opening, [Robinson] (105) 346
ETHER in peritonitis and other infections, [Haines] 415—ab
ETHICS: See also Physician
ETHYLHYDROCUPREIN in acute lobar pneumonia, [Moore & Chesney] (26) 1891
EUCALYPTOL and myrtol poisoning, [Parker] 1887—ab
EUGENICS, relation of hereditary eye defects to genetics and, [Howe] *1994
EVIDENCE, admissible, 1492—Ml
EXELENTO Quinine Pomade, 1024—P
EXERCISES, circulatory reactions to, during convalescence from infectious disease, [Mann] (27) 1891
  circulatory reactions to graduated work in normal people and in those with cardiac insufficiency, [Barringer] (13) 2053
  Swoboda's, 799—P
EXHAUSTION pseudoparesis, fatigue syndrome simulating early paresis developing under intensive military training, [Hunt] *11
EXPERT Testimony: See Testimony, Expert
EXPLOSIVES, optic atrophy and multiple peripheral neuritis developed in manufacture of trinitrotoluene, [Hamilton & Nixon] *2004
  phenomena in gunshot injuries, 333
EXTRACANTONMENT health zone regulations, 240, 629, 698
EXTRACT, Organ: See Organ Extracts
  Pituitary: See Pituitary Extract
EXTREMITIES: See also Arm; Leg
EXTREMITIES, fractures of long bones, [Francini] (55) 1984
EYE: See also Special Structures of Eye
EYE, action of miotic drugs on, with incomplete sphincter iridis, [Curdy] *1992
  after vaccination against typhoid, [Ginestous] (67) 578
  and heart reflex, [Mougeot & Duverger] (49) 658
  and heart reflex in shock, [Dorlencourt] (66) 1195
  and heart reflex may differentiate true nervous shock, 1021
  artificial, careless methods in fitting, [Lewis] 1882—C
  care of, during etherization, [Miller] *83
  disease, anamnesis with, [Rønne] (90) 1987
  diseases, protein therapy in, [Anderson] (111) 1344
  dislocation of lens, [Lopez] (91) 135
  drainage of, mechanical, [Frieberg] (127) 1200
  foreign bodies in, from war wounds, [de Lapersonne] (18) 1123
  foreign bodies in, (iron scrap in), [Van der Hoeve] (93) 895
  foreign bodies in, treatment of, 944
  hereditary defects of, relation to genetics and eugenics, [Howe] *1994
  hygiene of, [Ferro] (110) 819
  in dementia praecox, [Teal] (13) 1188
  in trench nephritis, [Kirk] (4) 490
  infections, Dakin's dichloramin-T for, [Green & Green] *1212
  injury of, [Wieden] (50) 2059
  injury in gassed, [Teullères] (53) 132, (42) 1265
  iodin in surgery of, [Guiral] (79) 1986
  of the army, [Greenwood] *2002
  partial loss of sight in one eye by physician, 264—Ml
  sarcoma, [De Salterain] (69) 1129
  syphilis of, treatment of, [Poulard] (68) 61
EYELID, chancre of, [Shaffner] *676

F

FACE mask and other measures in prevention of diphtheria, meningitis, pneumonia, etc., [Weaver] *76, 96—E
  mask for use by contagious disease attendants, [Dannenberg] *990
  mask in control of contagious disease, new adaptation of, [Capps] *910
  modern changes in, [Keith] 1020
  Neuralgia of: See Neuralgia, Trigeminal
  paralysis, chronic peripheral, operative treatment of, [Sharpe] *1354
  roentgen findings of sphenomaxillary-temporal region and, [Villandre] (65) 817
  treatment of scars on, [Poulard] (76) 1898
  trophic lesions in, [Talamo] (71) 964
FALLOPIAN TUBE, double lumen in, [Metcalfe] *20
  hemorrhage of ovary and, etiologic relation to pelvic hematocele and extrauterine pregnancy, [Bovée] 1975—ab
  left, and intestinal stasis, [Stewart] (21) 192
  primary malignant neoplasm of, probably deciduomatous, [Jacobson & Wells] (134) 58
  unilateral defect of ovary and, study in prenatal pathology, [Gellhorn] (11) 192
FASCIA transplantation into lateral defects of major arteries, [Neuhof] (121) 959
FASTENERS, clothes, for use of men who have lost one or both arms, 404
FASTING, hunger sensation in, [Carlson] (17) 343, 853—E
FAT absorption and cholesterol, 542—E
  blood, and lipoids of dog before and after production of experimental anemia, [Dubin] (34) 1188
  embolism following trauma to bones, [Caldwell & Huber] (129) 58
  in appendix, distribution of, and relation to inflammation, [Smith] (26) 956
  in urine, [Peutz] (123) 1642
  minimum ration of, [Bang] (99) 1130
  specific, rôle of, in complement fixation, [Warden] (36) 570
FATIGUE and communicable diseases among sailors, 1179
  effects of heat, cold, and, in encouraging infections, 674—ab
FAUCINE, 718—P
FEAR, morbid, acquired, [Voivenel] (57) 1639
FECES, ameba cysts in, technic for detection of, [Carles & Barthélemy] (31) 273
  examination of, in typhoid, [Baglioni] (79) 64
  in liver disease, [Campana] (81) 1802
  numbers of histidin decarboxylating organisms in, in dementia praecox compared with numbers in normal feces, [Jones] (35) 570
  occult blood in, new method for detection of, [Lyle & Curtman] (57) 417
  pus corpuscles in infant stool, [Zahorsky] (43) 1120
  typhoid bacilli in, glycerin in examination of, [Beckler] *768
FEDERAL Board for Vocational Education of soldiers, [Monroe] 2013
  Trade Commission requests use of official names, [Bracken] 558—C
FEDERATION of State Medical Boards, annual meeting of, 110
FEEBLE-MINDEDNESS, inquiry in venereal diseases and, 252
FEEDING: See also Diet; Nutrition
FEEDING, rectal, plan of, [Cornwall] *1451
FEES, construction of provision as to compensation of physicians, 484—Ml
  contingent, of witnesses, 484—Ml
  different views of claim for, 54—Ml
  medical, increase of, 715
  special, no authority for payment of, 124—Ml
FEET: See Foot
FELLOWS' Syrup and preparations of hypophosphites, 478—P
FELLOWSHIPS, teaching, 1553
FEMALE Regulator, Andrews', 1184—P
FEMUR, cyst of, [Gannon] (98) 1981
  fracture of, compound, value of caliper in obtaining extension in, [Besley] *87
  fracture of, compound war, [d'Alessandria] (85) 64
  fracture of, immobilization in, [Achard] (60) 893
  fracture of neck of, [Campbell] (105) 734
  fracture of neck of, in child, [Parker] *84
  Hodgen splint in fractures of, [Sherwin] 1889—ab
  separation of inferior epiphysis of, [Hijmans] (118) 967
  sound, shortening, [Calvé & Galland] (1) 1331, (37) 1505
  syphilis of, inherited, [Deromps] (29) 890
FERMENTS, defensive, [Abderhalden] (51) 658
  in infectious diseases, [Solovtsova] (104) 1576
FETUS, diagnosis of age of, by roentgenograms, [Hess] (65) 652
  modification of Ahlfeld method for determining maturity of, [Thoms] (117) 1636
  syphilis of, and suggested action of chorionic ferments, [Routh] (20) 491, (3) 572
FEVER, five-day, [Ceconi] (41) 275
  following infectious disease, [Baccarani] (61) 1404
  gastric secretion during, [Meyer & others] (32) 1033, 1768—E
  of unknown origin, [Pasteur & Hudson] (21) 656
  Puerperal: See Puerperal Infection
  tachycardia in enteric and other fevers, [Marris] (9) 2056
  trench, 310, 553, [Opie] 1888—ab, [Lambert] 2052—ab
  trench, changes in blood pictures in, [Triudin] (117) 1271
  trench, etiology of, 639
  trench, report on progress of investigations, [Strong & others] *1597
  trench, transmission by louse, 1247
  with sarcoma, [Schiøtz] (131) 1200
FIBRILLATION, Auricular: See Heart
FIBROID, radium in, [Kelly] 1976—ab
  uterine, radium in uterine hemorrhage and, [Miller] (105) 1636
  uterine, tendency to become sarcomatous, [Warner] (12) 192
FIBROMYOMAS, uterine, roentgen treatment of hemorrhagic metritis and, [Lawrence] (129) 271
FILARIA hematuria, [Lee] (87) 966
FINOCHIETTO and Steinmann pin traction stirrup, combination, [Hawley] *22
FISH, digestibility of, 1462—E
  intoxication from eating, [Seiglie] (100) 1269
  new, for food, 725—ME
  poison of tetrodon globe fish, pharmacologic action of, [Itakura] (60) 277
FISTULA, anal, [Edwards] (13) 2056
  anal, divulsion in treatment of, [Masci] (82) 1899
  anal, medical cure of, [Peter] (122) 1271
  duodenal, [Palmer] *595
  duodeno-ureteral, of spontaneous origin, [Davis] *376
  fecal, closure of, [MacLaren] 265—ab
  gastric, [Nario] (80) 1268
  in digestive tract, biologic treatment of, [Jorge & Soler] (88) 424
  urethral, 254
  vesico-vaginal, utilization of anal sphincter in correction of, [Turenne] (109) 1642
"FIT TO FIGHT," moving picture entitled, 1166
FLAG, saluting the, 2047
FLAT-FOOT: See Talipes
FLAVINE in wound treatment, [Pilcher & Hull] (8) 889, [Pearson] (14) 1123
  study of 50 cases treated by, [Bashford & others] (8) 419
FLIES, coal-tar creosote oil in checking of putrefaction and repelling of, 1005—E
  house, and bacteria, 1161—E
  house, in spring, 1536—E
FLORIDA eclectic November examination, 1028
  medical news, 861, 940, 1108, 1388, 1550, 1613
FLOUR, color test of, [Calendoli] (63) 1267
  milling process and beri-beri in war time, 1000—E
  plantain, for convalescents, [de Figueroa] (113) 967
  serodiagnostic test of, [Kostyamin] (100) 741
  standard for, 638
  wheat, bolting of, [Maurel] (35) 575
  whole wheat, [Feer] (54) 739
FLUORENE, tests with, [Guglialmelli & Delmon] (112) 819
FLUOROSCOPY: See Roentgenography
FONTANA'S stain for spirochaeta pallida, 338
FOOD, aldehyd in, tests for, [Pittarelli & Pittarelli] (41) 350
  and obesity, 694—E
  compulsory rations, 1112
  conference, interallied, 1321, 1608
  development of cooked food service in New York City, 475
  for poorer classes in war time, 234—E
  for the army, 1864—E
  gastric response to, determination and significance of intragastric conductance, [Bergeim] (1) 124
  infections from, and ptomain poisoning, 462—E
  inspection and food control, 538—E
  mode of action of, in increasing oxidation, [Burge & others] (18) 1332
  new, products, 725—ME
  oddities in, 852—E
  of worker in war time, 1944—E
  production and science, 1764—E
  rations, voluntary, for children, 46
  regulations, new, in Paris, 866
  shortage in Cuba, 555
  situation in London, 554, 1181
  streptococci a means for rendering foods palatable, 1603—E
  war problems and, [Wilbur] 409—C
  yield of, per acre in United States, 1004—E
FOOT, amputation of, [Trèves & Paramelle] (22) 1402
  apparatus for holding foot in flexion and inversion, [Victor] *678
  care of, in trenches, 233—T
  contracture and paralysis of, [Roussy & others] (28) 1337
  deformity of hand or, from contracture, treatment of, [Boisseau & d'Oelsnitz] (28) 1402
  dislocation of middle cuneiform bone, [Warner] *83
  frost-bitten or frozen hands and feet, [Mazzolani] (84) 1013
  frozen, treatment of, [Cocci] (70) 1801
  measuring, of soldiers, 324
  method of obtaining skin flaps in repair of mutilating injuries of, [Vivian] (122) 489
  mycosis of, [Strandberg] (119) 136
  pain in, of children, causes of, [Riosalido] (92) 1342
  painful, [Schauffler] 1889—ab
  perspiring and frozen, [St. Clair & Reichard] 233—T
  psychoneurotic contracture of hand or, [Roussy] (27) 890
  soldier's, [Ridlon] 806—ab
  strapping, [Morton & Taylor] (72) 1569
  sweating of, 91—T

- FOOT, trench, [Raymond & Parisot] (27) 2057
  - trench, etiology and treatment of, [Sweet & others] *455, (11) 1796
  - wounds of ankle and, in war, [Quénu] (74) 133
- FOREIGN BODIES, compass for locating, [Lebon] (41) 422
  - fate of scraps of metal in tissues, [Calandra] (72) 1640
  - in wound, liability for failure to discover; standard of care and errors of judgment, 1632—Ml
  - localization of, simple method of, [Young] *24
  - open safety pin in infant's stomach, [Palmer] 480—C
  - operative removal of, [Wallau] (101) 1803
  - pipe stem in child's trachea, [Steinsleger] (94) 425
  - roentgen localization of, [Tousey] 50—C
  - roentgen-ray localization of, improved caliper method for, [Kariher & Brown] *678
  - skin needle left in body of patient, 413—Ml
- FORLANINI, death of, 1875
- FORT Oglethorpe, dedication of auditorium at, 697
  - Riley band at Chicago session, 1464—E
  - Riley, Year Book of Medical Officers' Training camp at, 1468
- FRACTURE: See also under names of bones
- FRACTURE, adjustable screw extension for, [Willems] (53) 493
  - catching of nerve in, failure to use roentgen ray, 726—Ml
  - compound, bismuth iodoform paste in, [Leibinger] (71) 56
  - greenstick, of forearm, correction of deformity by continuous elastic traction, [Vincent] *78
  - of long bones in war, [Francini] (55) 1984
  - of long bones, new device for holding, [Simpson] (37) 1334
  - old infected, suture of, [Guillot & Wolmant] (48) 962
  - operative treatment of war, 1247
  - pathologic, complicated by myeloid sarcoma and cystic disease of bone, [Faulds & Teacher] (10) 735
  - shortening sound femur in, [Calvé and Galland] (1) 1331, (37) 1505
  - suspension and traction in, [Blake & Bulkley] (65) 133
  - treatment of, in war, [Serra] (41) 1126
  - war, primary and delayed primary suture in, [Baer] *1530
- FRAMINGHAM experiment in tuberculosis, 1974
- FRANCE, letter from Medical Reserve Corps officer in, 928
  - national information bureaus in, 1962
  - union of foreign colonies in, 254
- FRAUDS, medical, cooperation for prevention of, [Strickler] 567—ab
- FREEZING: See also Frost-Bite
- FREEZING is an accident, 1397—Ml
- FRENCH and Belgian physicians, contributions for, [Keen] 338—C, 873—C, 1116, 1788—C
  - Army, Medical Department of, work at front, 1180
  - Army, Medical Department of, work of, [Sieur] (29) 1265
  - Association of Surgery, meeting of, 405
- FRIEDMANN'S vaccine, end-results of, [Barnes] *909
- FRÖHLICH'S syndrome, [Madigan & Moore] *669
- FROSTBITE and perspiring feet, [St. Clair & Reichard] 233—T
  - of feet and hands, [Mazzolani] (84) 1043
  - of feet, treatment of, [Cocci] (70) 1801
- FUCHSIN in suppurating skin disease in infants, [Gismondi] (44) 350

G

- GACETA Medica de Caracas, 25th anniversity of, 1962
- GAERTNER, study of blood pressure by method of, especially in fibrillation of auricles, [Cohn & Lundsgaard] (35) 1259
- GALLBLADDER calculi, cancer of liver with, [Amaral] (82) 1269
  - calculi, cholecystectomy for, [Abalos] (86) 1406
  - calculi, detection of, by means of wax tip, [McWhorter] *737
  - complication, unusual, [Shoup] (14) 55
  - Disease: See also Bile Tract
  - disease complicating disease of internal genitalia, [Carstens] (19) 192
  - diseases, diagnosis of, [Kimberlin] (42) 268
  - diseases, medical treatment of, [Sowder] (43) 268
  - infections, prognosis of, [Gibbon] (2) 1792
  - perforation in pregnancy, [Van Os] (116) 820
  - surgery, [Martin] (44) 268
- GALL-DUCTS: See Bile-Ducts
- GALLSTONES: See Gallbladder Calculi
- GANGRENE, anaerobic, of bladder, [Legueu] (53) 1506
  - from arterial obstruction, [Blanc y Fortacin] (87) 1503
  - Gas: See Gas Gangrene
  - liability for, 1631—Ml
- GARCIA treatment of leprosy a failure, 1110
- GAS asphyxia, temperature, pulse and respiration curve in, [Volveael & Martin] (63) 578
  - asphyxiating, action of, [de Concillis] (76) 1508
  - asphyxiating, action of, on eye, [Teulières] (53) 132, (42) 1265
  - asphyxiating, acute gastritis following, [Ramond & others] (44) 962
  - asphyxiating, appendicitis following, [Moutier] (28) 1505
  - asphyxiating, diphtheria following, [Ravaut & Rénlac] (40) 891
  - gangrene, [Job & Roux] (49) 962, [Sacquepee] (47) 1983
  - gangrene, acidemia in, and conditions which favor growth of its infective agent in blood fluids, [Wright & Fleming] (18) 889
  - gangrene, antitoxin treatment of, 534
  - gangrene bacilli, latent infection with, [van Schelven] (113) 66
  - gangrene, fatal to 2 surgeons, 1020
  - gangrene, treatment of, [Gray] (4) 1503
  - in modern warfare, 1160—E
  - infection, acidosis in shock, hemorrhage and, [Cannon] *531
  - infection localized in war wounds, muscle group excision in, [Speed] *225
  - "mustard," [Rendu] (62) 1507
  - "mustard," pathology of, 1947—E
  - poisoning, local treatment for, [Rumpelmayer & Béclère] (55) 61
  - poisonous, gastric ulceration from, [Zagari] (77) 1802
  - treatment of scabies, etc., in animals, [Clayton] (38) 575
  - war, and tuberculosis, [Tedeschi] (66) 740, [Gimbert] (75) 817
- GASTRECTASIS: See Stomach, Dilatation of
- GASTRECTOMY, annular segmental, [Barber] (48) 192
- GASTRIC JUICE: See Stomach Secretion
- GASTRITIS: See also Dyspepsia
- GASTRITIS, acute, in gassed, [Ramond & others] (44) 962
- GASTRO-ENTEROPTOSIS: See Gastroptosis
- GASTRO-ENTEROSTOMY, [Lippmann] (58) 345, [Van Lier] (108) 1342
  - immediate jejunal feeding after, [Andresen] (15) 1890
  - in Mexico, [Martinez y Gonzalez] (84) 134
  - medical aspect of, [Carter] (6) 191
- GASTRO-INTESTINAL diseases, bacteriology of urine in children with, [Schwartz] (31) 809
  - diseases, examination with, [Le Noir & Delort] (25) 349
  - diseases in infants, classification of, [Marfan] (49) 199
  - diseases, intradermic reactions to proteins of infants with, [Greer] (17) 55
  - epidemic at Peoria, *622
  - tract, action of opium and some alkaloids on, [Macht] (8) 191
  - tract, atmospheric air in upper, [Kantor] (11) 2053
  - tract, fistulas in, biologic treatment of, [Jorge & Soler] (88) 424
- GASTROPTOSIS, [Pauchet] (67) 1574
- GASTROPYLORECTOMY for gastric ulcer, [Pauchet] (39) 492
- GAUCHER, Ernest, death of, 639
- GENERAL Medical Board, meeting of, 239
- GENETICS, relation of hereditary eye defects to eugenics and, [Howe] *1994
- GENITALIA, acquired syphilis of, in infant, [Haines] *370
  - complications of typhoid infections, [Cade & others] (60) 1340
  - diphtheria of skin and, (86) 1043
  - extensive prolapse of, [Gomez] (85) 424
  - gallbladder disease complicating disease of internal, [Carstens] (19) 192
- GENITO-URINARY and dermatologic centers, [Pasteau & Mallein] (40) 131
  - causes of back pain, [Baker] (4) 650
  - complications of typhoid, [Faroy] (51) 1573
  - diseases at Camp Dix, [Townsend] *682
  - psychoneuroses, [Uteau & Sauvage] (62) 1310
  - tract, cancer of lower, radium in, [Young & Frontz] (55) 269
- GENU recurvatum, congenital, treatment of, [Francini] (38) 350
- GEORGIA medical news, 402, 635, 861, 940, 1108, 1872, 1958
  - state board October examination, 121
- GERMAN brutality to prisoners, 867, 1482
  - plan for care, reeducation and return to civil life of disabled soldiers and sailors, [Sjögren] *379
- GERMS, filtrable or ultramicroscopic, clinical picture of diseases from, [Gabbi] (88) 64
- GINGIVITIS, infectious ulceromembranous stomatitis and, [Bowman] (57) 1120
- GINSENG, experimental study of, [Sakai] (10) 348
- GLANDERS in felines, [Carpano] (62) 1267
- GLANDS, Ductless: See Ductless Glands
- GLASS, ground, obsession of, 852—E, [Army surgeon] 1115—C
- GLASSES for soldiers, [Greenwood] *2002
  - ground, inflammable, [Chapman] 120—C
- GLIOMA of upper abdominal region, [Thompson] 266—ab
- GLUCOSE in urine, determination of, [Ugdulena] (85) 1302
  - in urine, rapid colorimetric method for estimating, [Isaacson] (74) 886
- GLYCEMIA, test, [Loeper & Verpy] (40) 656
- GLYCERIN in examination of feces for typhoid bacilli, [Beckler] *768
- GLYCOSURIA and alimentary hyperglycemia, tests of, 236—E
  - harmless, [Wijnhausen & Elzas] (104) 1342
  - in diabetes during intercurrent disease, [Cottin & Saloz] (27) 736
  - production of, by zinc salts, [Salant & Wise] (60) 1978
  - vs. glycuresis, 1866—E
- GLYCURESIS vs. glycosuria, 1866—E
- GLYCURONATES in urine, simple test for, [Askenstedt] (77) 886
- GLYCURONURIA in infants, [Raimondi] (66) 1507
- GODART, Justin, resignation of, 714
- GOITER: See also Hyperthyroidism; Thyroid
- GOITER, [Roux] (37) 274
  - Cure, Hayssen's, 718—P
  - endemic, in Spain, [Goyanes] (107) 1270, (99) 1510, (83) 1987
  - etiology and prophylaxis of, [Bernhard] (82) 817
  - exophthalmic, and Addison's disease, [Ramond & François] (56) 815
  - exophthalmic, and idiopathic cardiopathy, [Symmers] (30) 1033
  - exophthalmic, medical treatment of, and use of corpus luteum extract, [Hoppe] (62) 1569
  - exophthalmic, metabolism in, [Capezzuoli] (79) 495
  - exophthalmic, roentgenization of thymus in, [Waters] (8) 54
  - in Norwegian province, [Kjølstad] (125) 1272
  - in Switzerland, [Hunziker] (83) 1196
  - in tuberculous, [Bircher] (37) 274
  - ligation for hyperthyreosis, [Kummer] (37) 274
  - operations, factors for safety and ultimate results in, [Potter] (84) 57
  - operations, pneumonia after, [Arnd] (37) 274
  - operations, results of, [Lommel] (57) 1267
  - recurring, [Kocher] (37) 274
  - return of, after operation, [Sarkissiantz] (75) 63
  - symposium on, [Kocher & others] (37) 274
  - toxic, electrocardiographic observations in, [Krumbhaar] (2) 955
  - trachea flattened by, [Bircher] (37) 274
  - treatment and prophylaxis of, [Kocher] (37) 274
  - types of, [De Quervain] (37) 274
- GONOCOCCUS count, [Ramond & Charlet] (47) 815
  - endocarditis due to, case of, [Benson] *1524
  - infection of mucous membrane of oral cavity, [Mayhew] *1223
  - infections, specific precipitins in, [Watabiki] (33) 570
  - pus under potassium permanganate, [Maheu] (47) 962
  - resistance of spirochaeta pallida and, 950
- GONORRHEA, abortive treatment of, [Vecchia] (53) 1404
  - complicated by syphilis, [Lumb] (7) 1192
  - diathermy in, 951—ab
  - gas treatment of, 1027
  - treatment of, in male, [Renault] (30) 349
- GOODWIN, T. H. J. C., honors to, 316—E, 317, 1166
  - returns to Great Britain, 97
- GOOSEFLESH streak, [Pari] (65) 1340
- GORGAS, Surgeon-General, and the responsibility of Medical Department of Army, 1460—E
  - Surgeon-General, honorary degree awarded to, 1868
  - Surgeon-General, inspects Camp Greene, N. C., 543
- GOUT and kidney function, 28—E
  - blood pressure in, [Rosenbloom] *2000
  - chronic, excretion of ingested purins in, [Rosenbloom] *285
  - metabolism in, [Wentworth & McClure] (26) 343, 1539—E
- GRAFTS: See also Transplantation
- GRANULOMA inguinale, etiology of, [Walker] (56) 810
  - venereal, 1321, [Nin Posadas & others] (82) 1406
- GRAPEFRUIT or pomelo, 1537—E
- GRAVES, Robert James, nationality of, [Sheehan] 720—C
- GRAVES' DISEASE: See Goiter, Exophthalmic
- GROWTH capacity, relation between weight at birth and, [Hammett] (12) 1332
- GUAIACOL Carbonate, 1227
- GUAIODINE rejected by Council, 1026—P
- GUATEMALA earthquake, 639
  - Red Cross relief work at, [Hoagsdon] 1184—C
- GUMMAS in corpora cavernosa, [Clark] (82) 134
- GUMS, sloughing of, after installation of gold bridge, 1970
- GUTTA PERCHA, hot dressings combined with, 112
- GYNECOLOGY, graduate degree in obstetrics and, [Litzenberg] 1976—ab
  - radium in, [Condamin & Nogier] (61) 1507

H

- HABIT-FORMING DRUGS: See Drugs, Habit-Forming; and also under the names of drugs
- HAIR, falling of, early symptom of syphilis, [Pederson] (130) 1643
  - superfluous, removing, with electric needle is practicing medicine, 1789
- HALAZONE, 91, 779
- HALIFAX, supplies for, 843—ab
- HALL'S Catarrh Cure guarantee, 1113—P
- HAND, amputations of, partial, [Delitala] (43) 1126
  - artificial working, 1111
  - as disease spreader, 89—ab
  - contracture of, [Dumas] (53) 963

HAND, contracture of foot or, psychoneurotic, [Roussy] (27) 890
contracture of, hysteria as element in, [Boisseau & D'Oelsnitz] (53) 576
crippling of, [Daussat] (35) 650
deformity of foot or, from contracture, treatment of, [Boisseau & d'Oelsnitz] (28) 1402
frost-bitten or frozen feet and, [Mazzolani] (84) 1043
method of obtaining skin flaps in repair of mutilating injuries of feet and, [Vivian] (122) 489
mycosis of feet and, [Strandberg] (119) 136
HARELIP, [Matti] (55) 739
and cleft palate, [New] (70) 488
HARRISON antinarcotic law, medicolegal decision on prescribing of narcotics, 1027
law registry number on prescriptions, 721
HARVARD Cancer Commission, report of, 1495—ME
HAWAII January examination, 1326
medical news, 1175
HAY-FEVER, 689—T
and asthma, modern views of, 1765—E
resorts, physicians invited to contribute information on, 2048
HAYSSEN'S Goiter Cure misbranded, 718—P
HEAD, injuries of, [Gage] (70) 1189
injuries of, blood pressure in, [Armitage] (133) 654
injuries of, cranial decompression for, accompanied by signs of increased intracranial pressure, [Payne] 266—ab
injuries of, pulse rate and blood pressure as aid in, [Sieber] (7) 568
projectiles in neck and, [Patel & Arcelin] (79) 1899
HEADACHE, lumbar puncture, cause of, [MacRobert] *1350
with meningeal reaction, therapeutic action of lumbar puncture in, [Bambaren] (52) 351
HEALING, minor forms of, problems of, [Wright] 648—ab
HEALTH conservation, one mayor's view of, [Gillen], 70—ab
day, national, [Anders] 1561—C
department, public, for New Brunswick, 1110
department, public, in Honduras, 1783
departments, city, appropriations for, 165—E
officer, county, position of "all time," 647—Ml
problems and reconstruction in England, 45
public, administration, in Russia, [Winslow] 412—ME
public, conservation of, 796
public, cooperation of physicians and insurance companies in promotion of, [Muhlberg] 261—ME
public, exhibits in Canada, 552
public, in Cuba, [Capote] (81) 660
public, journal on, 721
public, review of work, 1373—ab
regulations in extra-cantonment zones, 240
resorts and baths, French, 45
state boards of, responsibility of, in war emergency, [Sawyer] 648—ab
HEARING, detection of pretended loss of, [Brownfield] *597
evaluation of, [Escat] (38) 131
reconstruction of defects of speech and, [Richardson] 1930
HEART: See also Cardiovascular Renal Disease
HEART, activity after injury to, 951
amyl nitrate inhalations in diagnosis of mitral stenosis, [Morrison] (7) 1795
and eye reflex, [Mougeot & Duverger] (49) 658
and eye reflex in shock, [Dorlencourt] (66) 1195
and eye reflex may differentiate true nervous shock, 1021
aortic insufficiency from air concussion, [Cramer & others] (33) 1571
auricular fibrillation, digitalis in, [Cushny] (49) 1261
auricular fibrillation, peripheral blood pressure in, [Cohn & Lundsgaard] (36) 1259
auricular fibrillation, study of blood pressure by method of Gaertner in, [Cohn & Lundsgaard] (35) 1259
auricular flutter, [Blackford & Willius] (31) 343, [Price] (13) 1400
HEART beat, enzymatic basis of, [Moore] (13) 808
beat, voluntary regulation of, 1374—E
block, [Wilson & Robinson] (32) 343, 644, [Ribeiro] (90) 1197
block and congenital heart disease in childhood, [Bass] *287
block, complete, with Stokes-Adams attacks, [Wilson & Robinson] (36) 650
block, epinephrin in, [Hardoy & Houssay] (54) 277
block, influence of thyroid extract on total metabolism and heart in, [Aub & Stern] (29) 343
camphor and action of, [Sigerist & Zangger] (52) 658
digitalis and control of auricular fibrillation and auricular flutter, with electrocardiograms illustrating effect, [Halsey] (17) 1033
dilatation, blood pressure and hemoglobin, clinical study of, [Polak & Heffter] (119) 959
disease, blood chemical methods in differential diagnosis of cardiac and renal disease, [Gradwohl & Powell] (103) 1894
disease, chronic, with acute rheumatism, [Josué & others] (47) 1800
disease, classification of, [Leclercq] (56) 576
disease, congenital, and heart block in childhood, [Bass] *287
disease, disposition of recruits with, [Swan] (72) 732
disease, heredity and, [Rodriguez] (106) 1198
disease, high blood pressure in soldiers with, [Merklen] (20) 348
disease, idiopathic, so-called, and exophthalmic goiter, [Symmers] (30) 1033
disease, in soldiers, [Jarløv] (107) 498
disease in soldiers in France, (V.A.D. and D.A.H.), [Hume] (19) 1504
disease, minor, [Lian] (52) 738
disease, oxygen in venous blood in, [Lundsgaard] (75-77) 652
disease, prognosis in, as related to discovery of murmurs and arrhythmia, [Babcock] *355
disease, suggestions for detecting, in registrants, [Schulman] 1489—C
disease, viscosity of blood in relation to, [Brandan] (86) 496
disordered action of, red blood cell count and hemoglobin of blood in, [Levy] (14) 59
distress, position on all fours to relieve, [Cecikas] (85) 1129
effect of deep held inspiration on murmur of slight aortic regurgitation in young subjects,, [Gordon] (8) 1123
effect of digitalis on, [Robinson & Wilson] (49) 732
electrocardiographic study of 2 cases of nodal rhythm exhibiting R-P intervals, [Heard & Strauss] (6) 955
epinephrin functional test of, [Loeper & others] (75) 1195, (47) 1506
extrasystolic arrhythmia, experimental research on origin of, [Pletnew] (28) 197
foreign body in, extraction of bullet from, [Hartmann] (34) 891
foreign body in, extraction of machine gun bullet from wall of, 714
foreign body in, late migration of rifle bullet from inferior vena cava to right ventricle, 1181
foreign body in, projectile in wall of, [Escande & Brocq] (70) 133
functional capacity of, [Barringer] (14) 125
functional capacity of right, [Calandre] (28) 574
functional capacity of, test of, [Breccia] (58) 423, 463—E
functional disturbances of, in soldiers, [Clerc & Aimé] (25) 2057
gunshot wound of liver, missile lodging in, [McCartney & Drummond] (12) 812
in scarlet fever, [Florand & Paraf] (46) 1506
in soldiers with bronchitis or pneumonia, [Morelli] (48) 423
infarction of, simulating acute surgical abdominal conditions, [Levine & Tranter] (7) 267
infection in childhood, nature and symptoms of, [Poynton] (4) 1123, (9) 1570
HEART, influence of thyroid extract on total metabolism and heart in heart-block, [Aub & Stern] (29) 343
insufficiency, circulatory reactions to graduated work in normal people and in those with, [Barringer] (13) 2053
irritable, of soldiers, prognosis of, [Lewis] (15) 735
irritable, of soldiers, psychoneurotic factor in, [Oppenheimer & Rothschild] *1919
irritable, tolerance of physical exertion shown by soldiers suffering from, [Lewis] (2) 1503
left recurrent paralysis and mitral disease, [Carrau] (31) 890
measurement of ventricles, [Beaujard] (28) 890
mitral stenosis and tuberculosis, [Burnand] (68) 1508
mitral stenosis associated with paralysis of recurrent laryngeal nerve, [Brown & Hempstead] *4
sclerosis, occasional type of loud systolic murmur in, [Neuhof] *1140
soldier's, [Tedeschi] (50) 351
syphilis, [Moore] (5) 1792
valvular disease of, from military standpoint, [Laubry] (34) 421, 1483
valvular disease of, in soldiers, [Lafosse] (24) 2057
valvular disease of, lungs with, [Tillman] (94) 662
ventricles of, roentgenoscopic outlining of, [Vaquez & Bordet] (29) 1125
wound of, [Vaccari] (52) 1404
wound of, immediate intervention in, 111
HEAT as industrial health hazard, 166—E
cramp, 951
effects of cold, fatigue and, in encouraging infections, 674—ab
production, effect of small breakfast on, [Soderstrom & others] (23) 1891
stroke is an accident, 1397—Ml
HEELS, high, [Galippe] (36) 492
high, influence on physiologic processes, [Quénu & Ménard] (10) 272
HELIOTHERAPY and pigmentation, [Jeanneret & Messerli] (59) 199
for war wounds, [Aimes] (30) 574
in tuberculosis, [Mayer] (36) 884
HELMINTHIASIS in Bahia district, [Torres] (66) 423
HELMINTHS in Cuba, [Agostini] (75) 740
HEMAGGLUTININ reaction as test of toxicity of various antiseptic reagents, [Bond] (2) 959
HEMATEMESIS after poisoning from war gases, [Zagari] (77) 1802
HEMATOMA in ear, [Mari] (37) 131
suprarenal, [Deluca] (94) 1509
HEMATOPOIETIC system, action of radium on, [Millet & Mueller] (63) 1979
HEMATURIA, filarial, [Lee] (87) 966
HEMIPLEGIA, malarial, [Léri] (59) 1897
Swedish movements in management of paralysis in, [Oden] *828
HEMOCHROMATOSIS, hemosiderin granules in cells of urine an aid to diagnosis of pernicious anemia and, [Rous] 1887—ab
iron metabolism of, [Howard & Stevens] (20) 125
HEMOGLOBIN after operation, [Dunn & Wynne] (45) 345
and blood pressure in postoperative shock, postoperative hemorrhage and postoperative cardiac dilatation, clinical study of, [Polak & Heffter] (119) 959
colorimetric determination of, [Palmer] (67) 417
three-drop method of determining, by Tallqvist scale, [Weidmann] 1563—C
HEMOGLOBINURIA, paroxysmal, hemolysis in, experimental report on, [Kurata] (6) 347
paroxysmal, typhoid superposed on, [Ugon] (73) 1129
plus Raynaud's disease, [Castex & Queirel] (78) 1406
HEMOLYSIN, immune, isolation, purification and concentration of, [Kosakay] 1497—ab
HEMOLYSIS in paroxysmal hemoglobinuria, experimental report on, [Kurata] (6) 347
HEMOLYSIS with anemia, signs of, [Hannema] (95) 425
HEMORRHAGE, acidosis in shock, gas infection and, [Cannon] *531
alterations in distribution and character of blood in shock and, [Cannon & others] *526
fluid substitutes for transfusion after, [Rous & Wilson] *219
internal, intravenous treatment of, [Ebstein] 362—ab
postoperative, blood pressure and hemoglobin in, [Polak & Heffter] (119) 959
secondary, from war wounds, prophylaxis of, [Revel] (49) 493
serotherapy of, [Dufour & Le Hello] (16) 348
HEMORRHAGIC DISEASE in new-born, injection of citrated blood in superior longitudinal sinus in, [Berghausen] *154
HEMORRHOIDS, injection treatment of, fatal results following, [Spencer] *222
HEMOSIDERIN granules in cells of urine as aid to diagnosis of pernicious anemia and hemochromatosis, [Rous] 1887—ab
HEMO-THERAPIN, 48—P
HEMOTHORAX, infected, treatment of, [Dobson] (12) 959
treatment of, septic empyema and, [Campbell] (4) 734
HENRY'S Red Rum Compound misbranded, 1634—P
HERBINE, 408—P
HEREDITY in brain convolutional patterns, 1540—E
HERNIA, diaphragmatic, acquired, report of case, [Murray & Morgan] (25) 130
diaphragmatic, from war wound, [Hagen-Torn] (98) 1576
femoral, [Kotzareff] (69) 1508
in children, [Brossy] (76) 63
inguinal and femoral, in soldiers, prophylaxis of, [Cajosso] (63) 201
inguinal, improved technic for repair of, [Payne] (130) 1122
inguinal, mixed, [Finochietto & Squirru] (88) 134
inguinal, reducible, subparietal rupture of intestine from traumatisms to, [Winslow] 414—ab
[illegible] slit, with ob- [illegible] 266—ab
[illegible] military service, whether operated on or not, [Bloodgood] *515
unusual conditions in, [Blanc y Fortacin] (108) 1803
ventral, spontaneous rupture of scar, with protrusion of small bowel, [Vaughan] 265—ab
HERNIOTOMY, technic for, [Finochietto & Squirru] (64) 352
HERPES zoster and chickenpox, [Goldberg & Francis] *1061, [Hough] 1255—C
zoster, bilateral crossed, [Comby] (30) 1982
HEXAMETHYLENAMIN in bronchitis, [Neves] (31) 814
HICKS bill to increase efficiency of Army Medical Service, 1542
HIGH FREQUENCY CURRENT for extraction of calculi incarcerated in lower end of ureter, [Young] (60) 1189
HILL climbing as therapeutic measure, [Jaquet] (36) 1125
HIP disease, functional cure of, in youth, [Froelich] (72) 133
good functioning in much altered, [Haglund] (121) 66
resection of, for war wound of joint, 405
tendon transplantation to stabilize, [Yergason] (15) 1633
wounds of, [Pauchet] (51) 493
HISTIDIN decarboxylating organisms in feces in dementia praecox, numbers of, compared with numbers in normal feces, [Jones] (35) 570
HISTOLOGIC technic, suppression of alcohol in, [Couturier] (46) 131
HODGEN extension suspension splint, [Nifong] 1889—ab
splint in fractures of femur, [Sherwin] 1889—ab
HODGKIN'S DISEASE, [Nordentoft] (110) 1344, (105) 1510
pseudoleukemia infantum (Von Jaksch's disease), report of case of, [Roth] *1914
radium and roentgen ray in, [Simmons & Benet] (24) 55
HOLMES, Oliver Wendell, date of paper, "The Contagiousness of Puerperal Fever" 1116

HOMICIDES in United States, 32—E
HOMOSEXUALITY, transformation of, by implanting testicles, 1528—ab
HONOR ROLL, 1882
HOOKWORM DISEASE: See Uncinariasis
HORSE serum, agglutination of human red blood corpuscles by, [Williams & Patterson] *1754
HOSPITAL alleged to be nuisance, 2044
  American, in Ireland, 2044
  American, opening of new, in London, 1246
  base, at Camp Upton, issues new publication, 1950
  base, mobilized, 628
  base, news of, 97, 171
  base, service at, 1883
  base, training enlisted personnel of, [Kilgore] *1226
  bombing of, 2043
  conduct of, [Corwin] 341—ab
  fare, no alcohol in, [Jona] (40) 275
  for reconstruction of disabled soldiers, 1101
  for wounded returned from France, 628
  history, allowed use of, evidence in abortion case, 340—Ml
  liability of, for theft by nurse and attacks by strangers, 1029—Ml
  municipal support of medical schools and, in Cincinnati, 783—E
  property rights and duties of public charitable hospital, 483—Ml
  psychopathic, commitment to, as related to question of personal liberty, [Dewey] *292
  ship sunk by Germans, 945
  ship, torpedoing of, 475, 1618
  small, in rural places, [Stebbins] 1889—ab
  standardization of, 1179
  train starts for France, 97
  units, repatriation of members of, 1784
  war problems of, 1618
HOT air, bacteriology of wounds under, [Lafaye] (43) 1265
HOURS of work and science, [Lee] 724—ME
HOUSING conditions and war workers, 448—ab
HUMERUS, fracture of, in throwing grenade, [Senlecq] (63) 893
HUNGER, appetite and gastric juice secretion during prolonged fasting (15 days), [Carlson] (17) 343
  sensation in fasting, 853—E
HYDATID CYST: See Echinococcosis
HYDROCELE, communicating, pathogenesis of, [Tsuji] (92) 1130
HYDROCEPHALUS of poliomyelitis, [Regan] (2) 1398
HYDROGEN ions in blood in different diseases, variations in, [Sonne & Jarløv] (90) 661
HYDRONEPHROSIS, congenital, [Geraghty] 1976—ab
  experimental, and blood nitrogen, [Reid] (47) 1035
  experimental, changes in kidney following partial ureteral obstruction, [Keith & Pulford] (16) 125
HYDROPHOBIA, date on which Pasteur began inoculation against, 1116
  treatment of, at Buenos Aires, [Mejia] (92) 1900
  vaccination against, 1246
  virus, nature of, [Remlinger] (19) 1123
HYGIENE, military, coal-tar creosote oil in checking putrefaction, 1005—E
HYPEREMIA in therapeutics, [Coderque] (70) 1405
HYPERGLYCEMIA, alimentary, and glycosuria, tests of, 236—E
HYPERHYDROSIS of feet and axillae, 91—T
HYPERNEPHROMA, male characters in woman with, [Guemes] (75) 353
  metastasis from, [Marmol] (93) 1269
HYPERSUSCEPTIBILITY: See Anaphylaxis
HYPERTENSION: See Blood Pressure, High
HYPERTHYROIDISM in recruit, [Brooks] 728—ab
HYPOCHLORITE and chloramin-T solutions, behavior of, in contact with necrotic and normal tissues in vivo, [Austin & Taylor] (69) 1794
HYPODERMIC syringe, self-filling, [Bessesen] *1145
HYPOPHOSPHITES, Compound Syrup of, Army Medical Department bids on 3 tons of, 783—E
  Fellows' Syrup of, 478—P
  preparations of, 478—P
HYPOPHYSIS CEREBRI: See Pituitary Body
HYPOSPADIA, operative treatment of, [Giaturco] (77) 1341
HYSTERECTOMY, effect of, on ovarian function, [Richardson] 1885—ab
  or myomectomy, [Bonney] (2) 1192
HYSTERIA as element in contracture of hands, [Boisseau & D'Oelsnitz] (53) 576
  neuroses and psychoneuroses, [Bernheim] (72) 63
  somnambulism in epilepsy and, [Bernheim] (34) 1403

I

ICHTHYOL now produced in Italy, 1020
ICTERUS: See Jaundice
IDAHO medical news, 402, 940, 1550, 1872
  state board April examination, 721
  state board October examination, 875
IDIOCY: See also Feeble-mindedness
IDIOCY, amaurotic family, (Tay-Sachs disease), [Rand] (34) 55
  mongolian, [Comby] (36) 737
ILEOCECAL valve, technic of operation for repair of, [Kellogg] (13) 568
ILEUM, nonrotated, with fatal intestinal obstruction, [Twyman] *672
  terminal, anomaly in location of, [Wright] (153) 655
ILEUS, different forms of, [Yaniz] (98) 1269
  induced by bunch of glands, [Guye] (67) 494
  mechanical, in pregnant and parturients, [Borin] (119) 66
ILIOLUMBAR region, access to, [Finochietto] (77) 894
ILLINOIS, civil administrative code of, and medical licensure, [Sheppardson] *763
  medical news, 41, 107, 179, 250, 329, 402, 471, 550, 636, 711, 793, 862, 940, 1014, 1108, 1176, 1243, 1316, 1388, 1479, 1550, 1614, 1779, 1872, 1959
  state board February examination, 1971
ILLUMINATION for fine handwork, [Pol] (110) 66
IMBECILITY: See Idiocy
IMMUNE hemolysin, isolation, purification and concentration of, [Kosakay] 1497—ab
IMMUNITY and complement fixation, [Blumberg] (53) 1568
  antitoxic, albumin-globulin ratio in, [Meyer & others] (74) 193
  rôle of, in conduct of present war, [Kolmer] 1328—ab
IMPETIGO *contagiosa* as cause of acute nephritis, [Stiell] (26) 1571
IMPLANTS: See Grafting; Transplantation
INCISION, new, for exposure of lower abdomen and pelvis, [Churchman] (22) 956
INCOME *tax returns*, allowable deductions on, 259, 802
INDIANA medical news, 41, 179, 472, 636, 711, 793, 1015, 1176, 1243, 1479, 1780, 1959
  state board January examination, 1256
  state board reciprocity report, 1326
INDICANURIA in children, [Schuyler] (94) 489
INDIGESTION: See Dyspepsia
INDIGO test, Von Dungern's, for *syphilis, [Fugimoto] (45) 731*
INDUSTRIAL accident and health insurance, cutaneous medicine in relation to, [Alderson] *71
INDUSTRY, *one* nonessential, 1539—E
INEBRIETY: See Alcoholism
INFANTS, abdomen in, [Gismondi] (60) 659
  abdominal injury in newly born, [Hedren] (95) 1988
  acute congestion of liver in, [Raimondi] (67) 133
  collecting urine from male, simple apparatus for, [Schloss] *223
INFANTS, digestive diseases in, classification of, [Marfan] (49) 199
  feeding, antiscorbutic value of milk in, [Chick & others] (13) 490
  feeding, availability of dicalcium phosphate when present as constituent *of infants' food,* [Bowditch & Bosworth] (30) 126
  feeding, baby that cannot take milk, [Clarke] (7) 1633
  feeding, dried milk in, 1923—ab
  feeding, factors impeding breast nursing, [Borrino] (61) 1985
  feeding, milk in, [Marfan] (54) 199
  feeding, premiums for breast feeding, 1875
  feeding, with congenital debility, [Mola] (50) 199
  gastro-enteric disorders in, intradermal reactions to proteins in, [Greer] (17) 55
  glycuronuria in, [Raimondi] (66) 1507
  hemorrhagic disease in, injection of citrated blood in superior *longitudinal* sinus in, [Berghausen] *514
  hypertonic, curative action of atropin in, [Hass] (2) 1566
  intestinal intoxication in, [Schloss] (8) 1032, 1375—E
  intracranial hemorrhage in newborn, [Hedren] (96) 1988
  meningococcus meningitis in newborn, [Miller] (19) 55
  mortality among negroes, 167—ab
  mortality and earnings, 153—ab
  mortality and syphilis, [Fournier] 1184—ab
  mortality during war in England, 868
  mortality in Buenos Aires, 1321
  mortality in Philippines, 1994—ab
  new-born, chlorin in blood of, [*Cannata*] (81) 64
  premature, blood findings in, [Lichtenstein] (135) 1046
  premature, rickets in, [Huenekens] (60) 56
  simple appliance for training infants to stool, [Eggleston] *156
  suppurating skin disease in, fuchsin in, [Gismondi] (44) 350
  syphilis in, acquired genital, [Haines] *370
  tuberculin tests in children and, cutaneous and intracutaneous, [Bass] (1) 1566
  tuberculosis preventorium in Farmingdale, [Hess] (16) 416
  tuberculous meningitis in, 50
  uterine tumor in new-born demanding operation, report of case, [Prince] *1212
  welfare stations, prizes given at, [Palmegiani] (82) 64
  welfare work in Belgium, [van Roy] (45) 657
  whooping cough in young, [Railliet] (51) 199
INFECTIONS, acute, postmortem *findings* in, [Lucke] *2006
  effects of heat, cold and fatigue in, 674—ab
  focal, in chronic diseases, [Langstroth] (5) 955
  Puerperal: See Puerperal Infection
  secondary contact, protective measures *against, in infectious* diseases, 167—E
  sensitized vaccines in prophylaxis and treatment of, [Cecil] (6) 2053
INFECTIOUS DISEASES, circulatory reactions to exercise during convalescence from, [Mann] (27) 1891
  ferments in, [Solovtsova] (104) 1576
  fever following, [Baccarani] (61) 1404
  measures against secondary contact infections in, 167—E
  mortality in, reduction of, 1246
  prophylaxis of, at Buenos Aires, [Coni] (117) 1642
INFLUENZA, epidemic, and influenzal sinus disease, [Robertson] *1533
  epididymitis with meningitis and, [Beaussart] (26) 2057
  Serobacterin Mixed-Mulford, 1968—P
INGLES, Elsie Maude, the Scotch physician, dies, 713
INHERITANCE of acquired characters, 621—E
INJECTIONS, intraportal, allergic phenomena following, [Falls] (83) 193
INJECTIONS, intraspinal, in urology, [*Watson*] *296
  intratracheal, simplified, [Mignon] (41) 492
  intravenous, of sodium cyanid as stimulant for respiration, 692—E
INK, skin, for radiography, [Finzi] (7) 572
INSANE, commitment of, to psychopathic hospital as related to question of personal liberty, [Dewey] *292
  progressive methods of handling, 1883—ab
INSANITY: See also Mental Diseases; Psychiatry
INSANITY in Peru, [Delgado & Bambaren] (88) 1341
INSOMNIA, insufficiency of liver and, [Arullani] (71) 1640
INSPECTION, Medical, of Schools: See Schools, Medical Inspection of
INSPIRATION, effect of deep held inspiration on murmur of slight aortic regurgitation in young subjects, [Gordon] (8) 1123
INSTRUMENT: See *also Apparatus*
INSTRUMENT, improvement on Bangs sound syringe, [Hühner] *151
  needle for suturing with wire, [Soresi] (75) 133
  self-retaining anoscope, [Pennington] *154
  simple appliance to train infants to stool, [Eggleston] *156
INSURANCE companies, cooperation of physicians and, in promotion of public health, [Muhlberg] 261—ME
  health, [Andrews] 2002—ab
  health, cutaneous medicine in relationship to industrial accident and, [Alderson] *71
  health, New York bill, opposition to, [Davin] 1115—C
  in Navy, 2048
  life, one's former physician medical examiner, 804—Ml
  of medical officers, 1788
  social, [Naegeli] (75) 1042
  social, legislation in 1917, 610—ab
  soldiers and sailors, 317
INTELLIGENCE, influence of rarefied air on, [Lopez] (85) 579
INTERALLIED conference on disabled fighting men, 1963
  surgical conference, third, conclusions adopted by, 943, (41) 1505
INTERNATIONAL Surgical Society, 865
INTERNS, competitive examinations for, after war, 1783
  liability for negligence of physicians or, 953—Ml
  medical, medical education and war, [Arnold] *451, 566—ab
  regulations governing enlistment of medical students and, 33
  remuneration for, 1554
INTESTINE, bacteria of, [Ford] 1886—ab
  bacteria of, in childhood, 30—E
  chronic inflammation of, [Mathieu] (30) 1505
  cysts of, [Hansson] (103) 498
  infantilism of, [Comby] (44) 1191
  intoxication in infants, [Schloss] (8) 1032, 1375—E
  invagination from tumor, [Henrichsen] (89) 1987
  obstruction, complete, from cancer of sigmoid and rectum, [Haggard & Floyd] 1330—ab
  obstruction due to any cause, multiple anastomosis for, [Ricketts] 264—ab
  obstruction, experimental, [South & Hardt] (46) 651
  obstruction, fatal, and nonrotated ileum, [Twyman] *672
  obstruction, immunity in, [Dragstedt & Moorhead] (67) 1036
  paralysis of, pituitary treatment of, [Kirmisson] (33) 891
  parasitism in troops, 866
  resection of, long, [Cannaday] 266—ab
  resection of stomach and, aseptic, [Gudin] (45) 738
  rupture of, subparietal, from traumatisms to reducible inguinal hernias, [Winslow] 414—ab
  segments from different parts of, differences in behavior of, [Alvarez] (7) 1332
  spirochetes in, in Philippine Islands, [Crowell & Haughwout] (70) 957
  stasis and left fallopian tube, [Stewart] (21) 192

INTESTINE, toxemia of high obstruction, [Keilty] *512
  toxemias, physiologic colectomy in, [Reed] *1584
INTRAGASTRIC conductance, 925—E
INTRASPINAL therapy in urology, [Watson] *296
INVALIDES, reorganization of, 639
IODID, action of bromid, nitrate ions and, on respiratory center, [Macht & Hooker] (90) 887
  pharmacology of, [Buchholtz] (134) 1200
IODIN and thyroid hyperplasia, 848—E
  in preparation of patient for delivery, [Thomas] 1115—C, [Stone] 1489—C
  in surgery of eyes, [Guiral] (79) 1986
  urine reaction, [Pezzi & Forli] (80) 965
IOWA medical news, 329, 636, 862, 1015, 1176, 1551, 1614, 1959
  reciprocity report, 2048
  state board February examination, 1326
  state board October examination, 260
  state board reciprocity report, 260
IRIDIS, sphincter, incomplete, action of mictic drugs on eyes with, [Curdy] *1992
IRIDOCYCLITIS complicating mumps, [Weve] (107) 1342
IRIS, tuberculosis of, [Frias] (99) 1342
IRON, elimination and distribution of, in liver and spleen in experimental anemia, [Dubin & Pearce] (34) 1259
  metabolism of hemochromatosis, [Howard & Stevens] (20) 125
ISCHEMIA, nervous, and obliteration of arteries in wounded, [Desplats & Buquet] (58) 1800
ISLE OF PINES spring water declared unfit for public use, 555
ISOSPORA, infection with coccidium and, in animals in Philippine Islands, [Haughwout] (119) 1262
ITALIAN medical men, accomplishments of, in war, [Heiser] *24, 464—ab
  medical students in army sent back to study, 943
  university to be founded in Switzerland, 1020
ITALY, American Red Cross in, 465
ITCH, tinea and vermin in horses, sulphuration treatment of, 476

J

JACKSONIAN paresis, [Meige & Bénisty] (55) 815
JAIL physician, employment of, and remedy of latter, 1565—Ml
VON JAKSCH'S disease, report of case, [Roth] *1914
JAPANESE mission to study typhus, 1874
JAUNDICE: See also Spirochaeta icterohemorrhagiae
JAUNDICE, albuminuria with, [Höjer] (103) 580
  bile resorption in, anatomic observations concerning, [Oertel] (25) 343
  cholemia in, [Garnier & Reilly] (42) 962
  following injections of novarsenobillon, 2 fatal cases of, [Fenwick & others] (4) 1795
  hemolytic, chronic, [Faber & Meulengracht] (89) 202
  hemorrhagic, [Siccardi & Bompiani] (59) 739
  infectious, [Salvaneschi] (70) 1267
  infectious, focus of, [Kamp & Wernøe] (93) 202
  infectious, serotherapy in, [Inada & others] (82) 1043
  simple catarrhal, 162—T
  spirochete, [Pagniez & others] (38) 891
  spirochete, afebrile, [Fiessinger & Leroy] (15) 272
  spirochete, laboratory diagnosis of, [Pagniez & others] (35) 1265
  spirochete, serotherapy of, [Martin & Pettit] (40) 962
  spirochete, of icterohemorrhagiae type, [Fiessinger & Leroy] (16) 272
  spirochetosis without, [Favre & Mathieu] (22) 1124
  toxic, with atrophy of liver, followed by regeneration and recovery, [Crawford] (5) 1795
  trench, lessons from, 1602—E
JAW, fracture of, [Japiot] (45) 575
  fractures of, nonunion of, [Cole] (7) 1400
  fractures of nose and, in war, [Hedlund] (118) 820
  gunshot injuries of, bone grafting in, [Pratt & others] (8) 1490
JEJUNAL feeding after gastro-enterostomy, [Andresen] (15) 1890
JEJUNOSTOMY, indications and methods for, [Mayo] (58) 56
JOINT formation, method of, in arthroplasty, [Phemister & Miller] (110) 1191
  fracture of, [Leriche] (50) 1266
  infections of, treatment by lavage and direct medication, [Churchman] *1047
  resection of, tardy, [Jean] (64) 1194
  sarcoma of capsule, [van Rijssel] (112) 66
  stiff, [Nageotte - Wilbouchewitch] (44) 1983
  syphilitic disease of, simulating tuberculosis, [Roberts] *372
  wounds of, gunshot, after-effects of, [Romer] (18) 1337
  wounds of, gunshot, systematic operative treatment of, [Trotter] (5) 572
  wounds of, in war, [Leriche] (46) 493
  wounds of, in war, first treatment of, [Maisonnet & Chauvin] (75) 133
JOURNALS, French medical, and war, 1180
  Italian weeklies, 1482
  medical, of South and Central America, 1110
  medical, war-time economies in, 1618
  new ophthalmologic, in Mexico, 1783
  on public health, 721
JURISPRUDENCE, medical, law governing liability of physicians and surgeons for malpractice, [Steinhardt] *585
JUVENILE delinquency, 388—E

K

KALA-AZAR: See also Leishmaniosis
KALA-AZAR in children in France, [Labbé & others] (37) 1638
KANSAS medical news, 550, 1243
KELOID, creosote in, [Lesieur] (43) 737
  roentgen treatment of, [Albert-Weil] (60) 132
KENNEDY'S Favorite Remedy, 1183—P
KENTUCKY medical news, 107, 250, 472, 550, 636, 862, 1015, 1176, 1388, 1872
  state board December examination, 951
  state board June examination, 260
  state board reciprocity report, 339
KEOGH, Sir Alfred, retirement of, 475, 945
KERATODERMIA, melanodermia plus, in Bell Ville, [Alvarez] (90) 496
  punctiform, new form of, [Matsumoto] (29) 2054
KIDNEY activity, regulation of, [Addis & others] (8, 10) 1566, (12) 1977
  activity, regulation of, effect of epinephrin and pituitary extract on action of kidney under strain, [Addis & others] (16) 1978
  and protein hypersensitiveness, 1298—E
  antiseptic properties and renal excretion of compounds related to phenol-sulphonephthalein, [Davis] *581
  autotransplant of left kidney to neck with right nephrectomy in dog, [Dederer] *6
  blood cyst in, [del Valle] (94) 966
  calculi in children, [Gurgel] (62) 423, [Cifuentes] (89) 1197
  calculi, pyelotomy for, [Fresno] (100) 1198
  calculi, small, new method for locating at operation, [Burns] (57) 269
  calculi, unusual case, [Fybus] (13) 812
  calculi with bilateral renal involvement, [Braasch] (42) 885
  cancer of, [de Berne-Lagard] (56) 1506
  changes following partial ureteral obstruction, [Keith & Pulford] (16) 125
  disease, blood chemical methods in differential diagnosis of cardiac and renal disease, [Gradwohl & Powell] (103) 1894
  disease, comparison of functional and anatomic findings in, [Stengel & others] (29) 1033
  disease, tuberculosis as factor in liver and, [Schönberg] (70) 495
  disease, viscosity of blood in relation to, [Brandan] (86) 496
  effects of thorium and other substances on renal parenchyma when retained, [Burns & Hopkins] (35) 2055
  elimination by, [Ambard] (30) 197, (74) 1898
  excretion, antiseptic properties and renal excretion of compounds related to phenolsulphonephthalein, [Davis & White] (33) 2055
  function, Ambard's constant in diagnosis of, [Aranha] (69) 1985
  function and gout, 28—E
  function, effect of pulmonary tuberculosis on, [Mills & Henderson] (12) 125
  function in senility, [Rappeye] (51) 652
  function, investigation of, 3 years after recovery from acute mercuric chlorid poisoning, [Goodwin] *85
  function tests with hypertrophied prostate, [Bie] (129) 1200
  function, urea index as test for, in war hospital, [Fitz] *1755
  infections, clinical and bacteriologic study, [Culver & others] *1444
  injuries, subparietal, management of, [Mason] 341—ab
  insufficiency, experimental, [Backman] (134) 1046
  movable, nephropexy for, [Lloyd] (88) 1894
  spirochetes in, presence of, [Kon & Watabiki] *1522
  syphilis of, congenital, [Canelli] (63) 1985
  syphilis of, mercurial treatment of, [Farmachidis] (77) 965
  tuberculosis of, 3 unusual cases of, [Buerger] (103) 419
  tuberculosis of, surgical, prognosis of, [Braasch] 2052—ab
  tumors of, microscopic findings in, [Watanabe] (96) 741
  wounds of, in war, 944, [Noguès] (55) 1506
  wounds of ureter and, treatment at front and behind lines, 254
KINEPLASTY, [Putti] (40) 1126
KING'S Throat and Lung Balsam misbranded, 1183—P
KITCHENS, public, [Nikolsky] (105) 741
KNEE, dislocation of, incomplete outward, [Ferguson] *1213
  loose bodies in, treatment by arthrotomy, 405
  wounds of, among French soldiers, [Judd] (84) 571
  wounds of, arthrotomy after, technic for, [Mosti] (44) 275
  wounds of, gunshot, casualty clearing station and base hospital observations on, with new method of draining knee joint, [Speed] *918
  wounds of, infected, [Monsarrat] (6) 1263
  wounds of, 100 cases, [Tatlow] (7) 812
  wounds of, primary total suture of, and unilateral arthrotomy, 1248
KRIEGSOEDEM, [Park] *1826
KRUEGER, Frederick W., resignation of, 1320

L

LABIUM minus, rupture of, during delivery, [Bidenkamp] (91) 354
LABOR: See also Obstetrics
LABOR, can we disregard calendar in setting date of, [Van Eman] 1889—ab
  causes of death in, in 100,000 cases at New York Lying-In Hospital, [Harrar] (4) 342
  chloroform, ether and nitrous oxid-oxygen in pregnancy and, [Davis] (88) 571
  rupture of labium minus during, [Bidenkamp] (91) 354
  tetany in pregnancy and, [Guggisberg] (68) 495
  tuberculosis and, [McSweeny & Wang] *368
LABORATORY and clinical observations, correlation of, 1065—ab
LA CREOLE Hair Dressing, 1025—P
LACRIMAL sac, massage of, [da Rocha] (85) 1269
LACTATION and mammary cancer, [von Steiger] (47) 1404
LACTATION and pregnancy, 1769—E
  effect of ingestion of desiccated placenta during first 11 days of, [McNeile] (4) 1118
  functioning of mammary gland, [Borrino] (45) 1126
LACTIC Acid: See Acid, Lactic
LAMINECTOMY for gunshot wound, [Hughes] (3) 1192
LARBISH in northern Nigeria, [MacFie] (16) 889
LARD, saving of, by druggist, [Montgomery] 1026—C
LARVICIDE, vegetable powder as, in fight against mosquitoes, [Thibault] *1215
LARYNX, blastomycosis with involvement of, cases of, [Downing] *85
  cancer of, radium in, [Botey] (107) 1641
  inflammation of glands in vestibule of, [Robin & Renaut] (40) 737
  pressure on, by extreme anterior curvature of cervical spine, death from, [Noehren] *680
  tuberculous lesions of, prognosis and treatment of, [Dworetzky] (20) 1119
  wounds of laryngotracheal region in war, [Guisez] (53) 1267
LATIN-AMERICAN medical press, [Fernandez] (97) 1269
LAVATORY chamber, modified, [Potsdamer] 1562—C
  chamber, practicability of modification of, [Klopper] *1457
LAW and war, [Cutting] 1939
LAXATIVE food preparations, 32—E
LEAD and birth rate, [Palmer] 779—ab
  parotitis, chronic, [Comby] (53) 815
LEFTHANDEDNESS cured following aphasia during typhoid, [Thomas] 481—C
LEG: See also Arm; Extremities; Limb
LEG, artificial, transitional, [Putti] (57) 1984
  artificial, vitalization of, [Pellegrini] (39) 250, [Vanghetti] (53) 1984
  paralysis of, prothesis to correct, [Boschi] (71) 1340
  swollen calf after war wound of, [Grégoire & Marsan] (54) 576
  wounds of arteries of, in war, [Mucquot & Fey] (69) 133
LEGISLATION, medical military, 1101
LEISHMANIOSIS, forms of, in Venezuela, [Rincones] (81) 579
  mutilating, case of, [Machado & Aleixo] (81) 1269
  of nose, [de Rezende] (90) 1802
LENS, dislocation of, [Lopez] (91) 135
LENTICULAR degeneration, progressive, pathology of nervous system in, [Pollock] (84) 418
LEPAGE, G., death of, 476
LEPERS escape from colony, 1320
LEPROSARIUM, national, need of, [Hoffman] 186—C
  site for, 1245
LEPROSY, care of, 1246
  Garcia treatment of, a failure, 1110
  in Porto Rico, 1320
  prophylaxis of, [Fages] (89) 895
  sodium gynocardate and chaulmoograte subcutaneously and intravenously in, [Rogers] (10) 1192
LEPTOSPIRA (spirochaeta) icterohemorrhagiae, cultural conditions of, [Noguchi] (67) 1791
  spirochaeta icterohemorrhagiae in nature, survival of, [Noguchi] (68) 1794
LEUKEMIA, acute, [Baastrup] (101) 896
  and tuberculosis, [Rietti] (75) 201
  benzene in, [Vaquez & Yacoel] (43) 1506
  erythrocytosis versus leukocytosis in, [Hedenius] (124) 66
  infiltration in spinal cord from leukemic mass cause of paraplegia, [Bassoe] (58) 1331
  remarks on, [St. John] (128) 271
LEUKOCYTES, emigration and bactericidal effects exerted in wound by, [Wright] (15) 1263
  variations of count in different positions of body, [Jørgensen] (89) 354
LEUKOCYTOSIS versus erythrocytosis in leukemia, [Hedenius] (124) 66

- LEUKOPENIA, diphasic, (rabbit), spontaneous infections with reference to, [Welskotten & Steensland] (79) 127
- LEUKOPLASIA, [Railliet] (60) 1194
- LIABILITY, board not liable for injury to patient escaping from pesthouse, 1565—Ml
  - for cataract where no operation is had, 1186—Ml
  - for damages from criminal operation, 483—Ml
  - for failure to discover foreign particles in wound, standard of care and errors of judgment, 1632—Ml
  - for gangrene, 1631—Ml
  - for negligence of intern or other physician given charge of case, 953—Ml
  - for representations and negligence or incompetence of physicians, 1972—Ml
  - not diminished by anything physicians did or failed to do, 562—Ml
  - of company and physician under contract for medical services, 2049—Ml
  - of physicians and surgeons for malpractice, law governing, [Steinhardt] *585
- LIBRARIES, American, in Paris, 1784
- LIBRARY of Surgeon-General's Office of Army, status of, and books to be added, 1782
- LICE, clothes, destruction of nits of, by solutions of cresol soap emulsion and compound solution of cresol, [Bacot & Lloyd] (20) 1895
  - protection against, [Homan] 1395—C, 1881—C
  - transmission of trench fever by, 1247
- LICENSE for sale of chemicals, 795
- LICENSURE, medical, and civil administrative code of Illinois, [Shepardson] *763
  - medical, and standards, [Strickler] 647—ab
  - medical, reciprocity in, 1099—E
  - national, for physicians in federal service, [Brown & Lowe] 480—C
  - no national, for reserve officers, 1255
- LILLY, Catarrhal Vaccine Combined and Influenza Mixed Vaccine, 1968—P
- LIMBS: See also Arm; Extremities; Leg
- LIMBS, artificial, vitalization of, [Putti] (40) 1126
- LIP, cancer of, radium in, [Janeway] *1051, [Scott] 1255—C
- LIPOIDS and blood fat of dogs before and after production of experimental anemia, [Dubin] (34) 1188
  - concerned in growth, [Barney] (67) 1980
- LIPOVACCINES, experimental investigation of, [Whitmore & others] *427, [Whitmore & Fennel] *902
- LIQUIDS, mailing of oils and, in glass, 1874
- LIQUORS, intoxicating, for what physician may and may not keep, 340—Ml
- LISTER, Henley's view of, [Henley] 623—ab
- LISTON splint, use of, admissible evidence, 1492—Ml
- LITCHI nut as food, 1605—E
- LIVER, acute yellow atrophy of, in syphilis, [McDonald] (10) 572
  - amebic disease of, emetin in, [Cros & de Teyssier] (35) 815
  - and hippuric acid formation, 1464—E
  - and its cirrhoses, [Mayo] *1361
  - atrophy of, and toxic jaundice followed by regeneration and recovery, [Crawford] (5) 1795
  - *cancer of, diagnosis of, [Ferrannini] (84) 1802*
  - cancer of, with gallstones, [Amaral] (82) 1269
  - cirrhosis of, ascites with, [Simon] (96) 662
  - congestion of, acute, in infants, [Raimondi] (67) 133
  - disease, stool signs of, [Campana] (81) 1802
  - disease, tuberculosis as factor in kidney and, [Schönberg] (70) 495
  - disease with gastric ulcer, [Navarro] (77) 1268
  - displacement of, from interposed intestine, [Moreau] (35) 1403
  - distribution and elimination of iron in spleen and, in experimental anemia, [Dubin & Pearce] (34) 1259
  - dulness as sign of typhoid, [Campani & Bergolli] (70) 1640
  - dysenteric abscess of, [Job & Spick] (25) 1337
  - echinococcus cysts of, painful, [Chauffard] (24) 1337
  - functioning in pathologic conditions, [Dedichen] (74) 278
  - functioning, tests of, [Gautier] (76) 134, [Dedichen] (93) 354
  - glycogen, storage and mobilization of, in thyroid fed animals, [Kuriyama] (74) 417
  - insufficiency of, and insomnia, [Arullani] (71) 1640
  - syphilis, [Hoogslag] (99) 895
  - wound of, missile entering hepatic vein and lodging in right ventricle, [McCartney & Drummond] (12) 812
- LOBSTERS as food, [Smith] 1751—ab
- LOCALIZATION of Bullets: See Foreign Bodies
- LOCKE'S fluid with acacia, infusion of, [Delaunay] (71) 1897
- LOCOMOTOR ATAXIA: See Tabes Dorsalis
- LONDON letter, 45, 112, 253, 333, 475, 553, 714, 795, 867, 945, 1020, 1112, 1181, 1246, 1391, 1482, 1553, 1618, 1876
  - schoolchildren, improvement in health of, during war, 795
- LOS ANGELES Medical Times, hamstringing Army Medical Corps, 29—E
- LOUISIANA medical news, 472, 793, 1177, 1243, 1316, 1479, 1551, 1614
  - state board December examination, 951
  - State Board of Health analyses of nostrums, 1024—P
- LUCIANA, retirement of, 713
- LUMBAR Puncture: See Rachicentesis
- LUMBOSACRAL pains considered anatomically, [Davis] (1) 650
- LUMINAL, 559
- LUNG abscess, nontuberculous, pneumothorax in, [Tewksbury] *293
  - appearance of, after death from asphyxia, [Litchfield] (20) 574
  - auscultation of pulmonary apices in young men, [King] (68) 487
  - cancer of, [Galliard] (57) 1897
  - cancer of, primary, roentgenologic diagnosis of, [McMahon & Carman] (5) 267
  - carcinosis of, [Bard] (64) 964
  - cavities in, [Mantoux & Maingot] (53) 1339
  - cavity simulating pneumothorax, [Zandren] (97) 662
  - Compression: See Pneumothorax, Artificial
  - crippled, [Labbé & Arié] (44) 1639
  - dust in, 526—ab
  - echinococcosis of, [Corvetto] (94) 1197
  - edema after skull wounds, [Moutier] (52) 1339
  - effect of inhalation of cigaret smoke on, [Webb] (22) 1119
  - emphysema of, [Galliard] (21) 272
  - infections, subacute and chronic nontuberculous, [Miller] (3) 191
  - macroscopic and microscopic findings in remaining lung after removal of one, [Takenaka] (83) 353
  - pneumonic, toxic substances from virulent pneumococci and, influence of quinin and urea hydrochlorid, ethylhydrocuprein hydrochlorid and other cinchona derivatives on, [Cohen & others] (37) 1634
  - pneumonic, toxicity of, [Weiss & others] (36) 1634
  - subdulness at apex of, [Ramond & François] (57) 815
  - Tuberculosis: See Tuberculosis, Pulmonary
  - volume in tuberculous men, [Garvin & others] (52) 268
  - with valvular heart disease, [Tillman] (94) 662
  - wounds of, in war, treatment of, 334
  - wounds of pleura and, [Roux-Berger] (66) 1897
  - wounds of pleura and, gunshot, [Moynihan] (125) 58
- LUPUS erythematosus discoides and tuberculous infection, [Weiss & Singer] (4) 1498
- LYMPH, flow of, in nerves, experiments bearing on, [Alford & Schwab] (81) 886
  - viscosity of, [Opitz & Nemser] (4) 121
- LYMPH NODES, attempt to produce immunity by transplanting tuberculous lymph nodes into normal animals, [Webb & others] (35) 884
  - cervical, enlargement of, in children as evidence of infection, [Gunson] (3) 675
  - palpable intercostal lymphatics in infants, [De Stefano] (46) 1126
- LYMPHADENOSIS and pernicious anemia, [Frattini] (75) 1575
- LYMPHOGRANULOMATOSIS, [Wallgren & Hellman] (121) 136
  - in man of 24, [Udaondo & Casteigts] (81) 424
  - in syphilis, [Melchior] (119) 820
- LYMPHOID hyperplasias, toxic, and lymphosarcoma and allied diseases, [Symmers] (10) 650
- LYMPHOSARCOMA and lymphoid hyperplasias, [Symmers] (10) 650
- LYMPHOTHERAPY and serotherapy, [Dezwarte] (46) 1266

M

- McCRAE, JOHN, died "In Flanders' Fields," 316—E
- MacDONALD'S *Atlas Compound Famous Specific No. 18*, 718—P
- McGILL UNIVERSITY admits women, 1481
  - military service of, 552
- McLAUGHLIN, A. J., new Assistant Surgeon-General in Public Health Service, 628
- MAGNESIUM and calcium metabolism, studies in, [Givens] (11) 1567
  - and cancer, [Dubard] (18) 1798
  - sulphate in infected wounds, [Morison] (4) 1335
- MAGNIN, A. J., death of, 45
- MAIL for Expeditionary Forces, 1006, 1618
- MAILING *of liquids and oils in glass*, 1874
- MAINE medical news, 180, 793, 1243
  - state board July examination, 51
  - state board March examination, 1789
  - state board November examination, 339
- MALARIA, autochthonous, 1877
  - bird, and pathogenesis of relapse in *human malaria*, [Whitmore] (48) 1035
  - campaign against, 1962
  - control of, 878—ME
  - hemiplegia in, [Léri] (59) 1897
  - in Camagüey province, 1246
  - in camps, Health Service to fight, 628
  - in England, precautions against spread of, 2044
  - in France, [Leger & others] (50) 1800
  - in infants, [Smith] (123) 1122
  - in troops in Macedonia, [Armand-Delille & others] (29) 1337
  - in Venice and war, [Jona] (64) 201
  - meningitis simulating, [Bezançon & Gusman] (47) 198, [de Massary & Tockmann] (42) 891
  - metabolism in, [Barr & Du Bois] (25) 1891
  - 1917 epidemic of, [Cremonese] (50) 1404
  - prophylaxis of, [Roche] (27) 60
  - psychoses of, [Porot & Gutmann] (37) 1799
  - quinin acid hydrobromid intravenously in, [Knowles] (9) 1637
  - quinin in, prophylactic use of, [Treadgold] (1) 1981
  - quinin subcutaneously in, [Pende] (65) 201
  - recent acquisitions in our knowledge of, [Bernard] (57) 494
  - remedies relative to mosquitoes and, 1631—Ml
  - subtertian, 35 cases, [à Court] (20) 814
  - suppurating parotitis of malarial *origin*, [Moreau] (48) 198
  - suprarenal form of, [Fraga] (97) 1509
  - tartar emetic intravenously in, [Hughes] (17) 1571
  - tertian, quinin treatment of, [Stephens & others] (4) 889
  - treatment and complications of, [Wicht] (11) 1981
  - treatment of, [Leenhardt & Tixier] (58) 494, [Carles] (61) 816, 945
  - tremor in, [de Brun] (31) 1638
  - urticaria with, [Garin & Pasquier] (27) 273
- MALIGNANT Growth: See Cancer; Tumor
- MALINGERING, 1091—ab
- MALL, FRANKLIN PAINE, an appreciation, [Meyer] 121—ME
- MALNUTRITION among school children, 839—ab
- MALPRACTICE, cause of action for, 54—Ml
  - choice of remedies in action for, 616—Ml
  - law governing liability of physi*cians and surgeons for*, [Steinhardt] *585
- MALTA FEVER, vaccine against, 943
  - vaccine therapy of, [Chiriaco] (65) 1985
- MALTED FOOD, Thompson, stock plan, 2047
- MANDIBLE: See Jaw
- MANUAL of instructions for Medical Advisory Boards, changes in, 697, 784, 785
- MARMOLA obesity cure, 1163—E
- MARRIAGE and venereal diseases, [Orfila] (84) 661
- MARYLAND medical news, 41, 107, 180, 250, 402, 472, 550, 636, 711, 793, 862, 940, 1016, 1108, 1177, 1243, 1316, 1388, 1479, 1551, 1614, 1780, 1872, 1959
- MASON, WILLIAM E., another testimonial smashed, 1161—E
- MASSACHUSETTS medical news, 107, 403, 472, 862, 1016, 1177, 1243, 1316, 1479, 1551, 1780, 1873, 1959
  - service examination, 1629
  - state board March and special examinations, 1629
  - state board September examinations, 722
- MASTITIS, bovine, relation of streptococci to septic sore throat and, [Davis] (16) 650
  - capillary drainage of, [Chaput] (35) 891
  - dissecting perimastitis, [Cortabarria] (71) 1129
- MASTOID operation, paraffin film treatment after, [Daure] (48) 1573
- MATCHES, dermatitis from safety-match boxes, [Rasch] (114) 1344, [Christiansen] (118) 1804
- MAUDSLEY, Henry, death of, 715
- MAXILLARY BONE: See Jaw
- MAYR'S Wonderful Stomach Remedy, advertising of, 1393—P
- MEANS, Dr. W. J., honored, 553
- MEASLES and German measles in army camps, 315—E
  - and *military medicine*, [Hackett] 728—ab
  - bacteriology and immune reactions of rubella and, [Tunnicliff] (35) 1634
  - epidemic of pneumonia and, at Camp Wheeler, [Duncan] (70) 732
  - German, and measles in army camps, 315—E
  - German, bacteriology *and immune* reactions of rubeola and, [Tunnicliff] (35) 1634
  - German, epidemic of, in city adjacent to army cantonment and probable relation, [Geiger] *1818
  - induced diagnostic eruption in, [Godlewski] (39) 962, [Le Noir] (35) 1338
  - nature of, [Bristol] (32) 1188
  - postmortem findings in measles-bronchopneumonia and other acute infections, [Lucke] *2006
  - predisposition of streptococcus carriers to complications of, separation of carriers from non-carriers at base hospital, [Levy & Alexander] *1827
  - problem of, [Herrman] (41) 344
  - sequel to, hitherto undescribed, [Vroom] (76) 1334
  - streptococcal infections following, [Irons & Marine] *687
  - transfusion in, [Ribadeau-Dumas & Brissaud] (23) 1798
- MECHANOTHERAPY for wounded, [Amieux] (60) 577
- MEDEOL Suppositories, 719—P
- MEDIAN bar excisor, [Braasch] *758
- MEDIASTINUM, entrance of air into, *during operation* on base of neck, [Buford] (111) 1636
  - projectiles left in, [Le Fort] (77) 1899
- MEDICAL Advisory Boards, manual of instructions for, 697, 784, 785
  - Advisory Boards, powers granted local *boards* previously delegated to, 695—E
  - Advisory Boards, selective service regulations for, 465

MEDICAL Advisory Boards, work of, 541—E [Hale] 721—C
Bulletin, 33
Corps and Medical Reserve Corps of Army, strength of, 393
Corps instruction extended, 317
Corps, National Army, orders to officers of, 1009, 1102, 1270, 1309, 1383, 1473, 1445, 1610, 1952
Corps, orders to officers of, 36, 101, 174, 244, 324, 396, 466, 545, 631, 704, 787, 854, 932, 1009, 1102, 1169, 1237, 1309, 1383, 1473, 1545, 1610, 1773, 1952
Corps, refusal of direct representation of, on Army Council, 714
Corps, regular, an opportunity, 1160—E
Corps, regular, officers needed for, 1100
Corps, regular openings in, 1604—E
Corps, repatriation of members of, 1482
Department and Compound Syrup of Hypophosphites, 783—E
Department and General Staff, 1539—E
Department, filling vacancies in, 1006
Department, new legislation concerning, 1006
Department, personnel of, 465, 543, 697, 784, 853, 928, 1006, 1100, 1166, 1234, 1307, 1380, 1467, 1541, 1607, 1771, 1868, 1949
Department, pharmacist in, [White] 1562—C
Department, rank and pay of, 1006
Department, work of, [Sieur] (29) 1265
Education: See Education, Medical
military service, information regarding, 1378—E
officer, American, awarded British military cross, 1234
officer, American, awarded French war cross, 1307
officer, American, missing, 1307
officer, experience of, in France, 928
officer, experience of, in war zone, [de Tarnowsky] 699, 1382
officer, experiences of, with British army in recent activities in Flanders, [Pettit] 1308
officer, missing, reported as prisoner, Lieut. John S. Abbott, 1467
officer of Navy, problems of, [Odell] 563—ab
officer wrongfully passing applicant for enlistment, 1493—Ml
officers, American, under fire, 1234
officers, British, card index of, 2043
officers, call for, 1098—E, 1228—E
officers convicted by courts martial, 317
officers discharged from service, 698
officers, education of, and all year medical study, [Dock] *1595
officers for army and navy, need of, 1377—E
officers, French, assignment of, at front, 44
officers in France approve appropriation for research, 169
officers, increased rank for, 465, 539—E, 542—E, 6 6—E, 926—E, [Seaman] 1252—C
officers, instruction books for medical training camps and, 1883
officers, insurance and compensation of, 1788
officers, leave of absence for, 1950
officers, outfit of, [Green] 1469
officers, questions of interest to, 1325
officers, response of American Medical Association to call for, 1301—E
officers wounded, 543, 1380
papers, "Brevity is soul of wit," [Haupt] 1254—C
records of army, English, 795
Reserve Corps and Medical Corps, National Army, commissions in, 1490
Reserve Corps and Medical Corps of Army, strength of, 393
Reserve Corps Captains recommended for promotion, 631, 1168
Reserve Corps, commissions accepted in, 1609, 1869, 1951
Reserve Corps, commissions in, acceptance of, 1255
Reserve Corps, commutation of quarters for, 627—E, 1006, 1101, 1232—E, 1255, 1490
Reserve Corps, elegibility for admission to, 1490, 1883
MEDICAL Reserve Corps, enlistment in, 1255, 1949—E
Reserve Corps, first lieutenants of, recommended for promotion as captains, 402, 631, 854, 1168
Reserve Corps, large cities delinquent in, 1605—E
Reserve Corps, list of members, 1604—E, 1644
Reserve Corps, national licensure for physicians in federal service, [Brown & Lowe] 480—C
Reserve Corps officer, British cordiality toward, [Silliman] 1184—C
Reserve Corps officers, American, English appreciation of, 1770
Reserve Corps officers and state licensing board, 1490
Reserve Corps officers recommended for promotion, 1544
Reserve Corps officers, Surgeon-General's appeal for 5,000 additional, 1165
Reserve Corps, orders to officers of, 36, 102, 175, 244, 324, 396, 467, 545, 632, 705, 787 855, 932, 1009, 1103, 1169, 1237, 1309, 1383, 1473, 1545, 1610, 1773, 1869, 1953
Reserve Corps, Owen-Dyer bill for increased rank for, 539—E, 542—E, 628—E
Reserve Corps, pay of officers of, 1490
Reserve Corps, physicians having accepted commissions as captains in, since March 1, 1918, 1169
Reserve Corps, physicians having accepted commissions as first lieutenants in, since March 1, 1918, 1169
Reserve Corps, physicians having accepted commissions as majors in, since March 1, 1918, 1168
Reserve Corps promotions, 786
Reserve Officers, military medical survey by American Medical Association, 1378—E
Reserve Officers, Navy needs, 1006
Reserve Officers needed, number of, salaries, expenses and allowances, 1563
Reserve Officers, no national licensure for, 1255
Roll of Honor, 1604—E, 1644, 1382
Roll of Honor, keep up your own, 1605—E
service at Camp Grant, [Baum] 563—ab
service, Hicks bill to increase efficiency of, 1542
training camps, instruction books for medical officers and, 1883
MEDICINE, clinical, modern, [Ascoli] (74) 965
divining rod in, [van Rijnberk] (91) 895
efforts to discredit modern science of, 29—E
jurisdiction of prosecutions for illegal practice of, 727—Ml
military, first American book on, 680—ab
new section on, 1874
notes given to persons practicing without certificates, 562—Ml
practice of, drugless healing included in term, 1767—E
practice of, in Cuba, [Lainé] (99) 1269
student's clinical course in, [Dock] 566—ab
MEDIEVAL panacea, 1605—E
MEDITERRANEAN FEVER: See Malta Fever
MEGACOLON, [Finochietto] (99) 1044
MELANCHOLIA, subacute, in soldiers, [Caussimon] (40) 575
MELANODERMIA plus keratodermia in Bell Ville, [Alvarez] (90) 496
MELANOSARCOMA: See Sarcoma, Melanotic
MELTING pot, amalgamation of our citizens through the war, [de Tarnowsky] 1973
MELUBRIN, 874
MENCIERE treatment for war wounds, [Mencière] (52) 1800
MENINGES, hemorrhage of, from air shock, [Guillain & Barré] (26) 1337
hemorrhage of, in war pathology, [Guillain] (38) 1638
permeability of, to arsenic in paresis and tabes, [Barbat] *147
MENINGISM, malarial, [de Massary & Tockmann] (42) 891
MENINGITIS, [Bijl] (95) 895
acute, in inherited syphilis, [Hutinel] (50) 1983
MENINGITIS at Camp Greene, [Woolley] (54) 1568
at Montevideo, [Morquio & others] (97) 894
at Palermo, [Di Cristina & Sindoni] (60) 1985
cerebrospinal, [Laroche] (38) 656
cerebrospinal, epidemic, at Camp McClellan, [Medlar] *458
cerebrospinal, epidemic, intravenous serum treatment of, [Herrick] (18) 1398
cerebrospinal, in army, 237—E
cerebrospinal, 92 cases of, [Attlee] (37) 1895
cerebrospinal, serum sickness in, [Ker] (18) 130
diagnosis of, [Vigano] (79) 1043
epidemic, [Kapsenberg] 1577
epidemic and serotherapy, [Fabbretti] (66) 1405
epidemic of, at Camp Jackson, [Herrick] *227
epidemic, of different origins, [Bézy] (37) 737
epidemiology of, [Mink] 563—ab
epididymitis after, [Costa & Troisier] (45) 1040
epididymitis with influenza and, [Beaussart] (26) 2057
eye and ear complications of, [Zaraychi] (42) 492
face mask and other measures in prevention of, value of, [Weaver] *76, 96—E
in army camps, control of, 624—E
in infants, [Hallez] (55) 1040
in troops on active service, [Dopter] (49) 1194
increase of, 475
meningococcus, in new-born, [Miller] (19) 55
meningococcus infection and, [Thomsen & Wulff] (100) 498
meningococcus, pneumococcus invasion in, [Netter & Salanier] (29) 656
otogenous, without suppuration in middle ear, [Eiras] (70) 352
parotitis complicating, [Kaunitz] 1448
pneumococcus, [Panayotabou] (45) 198, [Mallié] (57) 1573
serotherapy in, [Syk] (120) 136
simulating malaria, [Bezançon & Gusman] (47) 198
syphilitic, [Castex & Pradere] (65) 1128
tardy, [Aimé & Chéné] (31) 1125
tardy, meningococcus infection with, [Cantieri] (76) 201
trichinosis simulating, with findings of trichina larvae in spinal fluid, [Meyer] *588
tuberculous, in infants, 50
tuberculous, intraspinal injection of air in, [Ramond & François] (19) 348
uremic, [Goyena & Peradotto] (88) 395
vaccination against, [Quarelli] (78) 495
walled-in, [Acuña & Casaubon] (31) 1505, [Leroy and Parof] (22) 2057
MENINGOCELE, sacral, [Roux] (66) 964
MENINGOCOCCUS, [Caldarola] (84) 817
agglutination, differentiation of, [Netter] (47) 1040
and parameningococci, [Dopter & others] (38) 198
carrier, 781—E
carrier, positive intracutaneous reaction in, [Gay & Minaker] *215
cultures, simple methods for prolonging viability of, [Bradley] *1816
cultures under partial oxygen tension, explanation of poor success of usual cultural methods, [Cohen] *1999
distribution of, in upper respiratory tract of carriers, [Herrold] *82
epididymitis, [Lancelin] (22) 272
identification and isolation of, from nasopharynx, [Olitsky] *153
infection, [Sørensen] (93) 1987
infection and meningitis, [Thomsen & Wulff] (100) 498
infection with tardy meningitis, [Cantieri] (76) 201
influence of active normal serum on, [Kolmer & others] 1329—ab
influence of active normal serum (complement) on, [Matsunami & Kolmer] 1329—ab
MENINGOCOCCUS intracellularis, cultivation of, from blood, [Baeslack & others] *684
meningitis, pneumococcus invasion in, [Netter & Salanier] (29) 656
septicemia, [Netter] (29) 1982
serological work on, [Andrewes] (21) 130
types concerned in epidemic infections, [Hitchens & Robinson] 1329—ab
MENOPAUSE, pathologic uterus at, [Robins] (12) 1033
MENTAL defect, diagnosis of higher grades of, [Higgins] *74
defectives, report of 10,000 cases, [Schlapp & Paulsen] (55) 732
deficiency and Binet-Simon tests, [Priestley] (2) 655
deficiency and congenital syphilis, [Higgins] (6) 1498
diseases and alchoholism, 1962
diseases, examination of regiment, United States Army for nervous diseases and, [Bowman] (2) 1977
diseases, grouping of, [Southard] (61) 811
diseases, reconstruction problem as it relates to, [Hutchings] 1928
hygiene workers, training school for, 1961
MERCURIALIZED serum, salvarsanized, in syphilis of brain and cord, [Nicholson] (122) 888
MERCURIC Benzoate, 459
MERCURY, absorption and excretion of, 392—E
absorption of, when applied by inunction, [Schamberg & others] *142
chlorid intoxications, acute, in dog with special reference to kidney injury, [MacNider] (38) 1259
chlorid, intravenous injections in treatment of enlarged spleen, [Greig & Ritchie] (17) 1192
chlorid poisoning, investigation of kidney function 3 years after recovery from, [Goodwin] *85
chlorid poisoning, principles of treatment in, [Sansum] *824
idiosyncrasy to, [Gjessing] (120) 1272
in nervous plus renal syphilis, [Farmachidis] (77) 965
influence of arsphenamin and, on antibody production, [Kolmer & Toyama] 1496—ab
inunctions of, and drainage of cerebrospinal fluid in paresis, [Finlayson] (7) 1977
iodid, red, intravenous use of, [Rowe] (55) 1568
metallic, globules of, in tissues; findings in aortic aneurysm with erosion of vertebrae, [Kolmer & Mastin] *1290
scarcity of, in Denmark, 1116—ab
treatment, embolism after, [von Bassewitz] (94) 64
METATARSAL bone, transposed, observation on, [Brown & Brown] *1353
METHYL ALCOHOL 725—ME
blindness from industrial use of 4 per cent. admixture of, [Robinson] *148
poisoning, [Gettler & St. George] *145
METRIC system for army prescriptions, 802
METRITIS, hemorrhagic, roentgen treatment of, [Lawrence] (129) 271
METRORRHAGIA: See Uterus, Hemorrhage
MEXICAN Oil misbranded, 1183—P
MEXICO, medical journalism in, 1597—ab
national medical congress in, 865
National Medical Institute of, 332, [Terres] (75) 423, 1179
MICE, breeding, method of, [Hon] *1225
MICHIGAN medical news, 41, 636, 863, 1016, 1177, 1614
state board October examination, 121
state board reciprocity report, 1185
MICROORGANISMS, action of cold on, [Ruata] (37) 1125
MIDWIFE, [Edgar] 1975—ab
MILITARY Hygiene: See Hygiene, Military
MILITARY information asked, 1380
medical service in history, (90) 818
Service Bill of Great Britain and its relation to medical profession, 1381
Surgery: See Surgery, Military

MILITARY training, intensive, exhaustion pseudoparesis, fatigue syndrome simulating early paresis developing under, [Hunt] *11
training, universal, versus physical training, 95—E
MILK and spasmophilia, [Larsson] (133) 66
antiscorbutic value of, in infant feeding, [Chick & others] (13) 490
condensed, sale of, 945
congress in Uruguay, 1390
cost of, in Chicago, 828—ab
distribution in Costa Rica, 1390
dried, in infant feeding, 1923—ab
in infant feeding, [Marfan] (54) 199
infections due to, 1462—E
modification of cow's, for infants, [Marfan] (47) 657
parenteral injection of, [Uddgren] 1257—ME
problem in Cuba, 865
production in animals of old age, 391—E
proteins of cow's milk, [Osborne & Wakeman] (58) 417
purins in, 784—E
rising cost of, 1001—E
secreted by suckling doe kid, analysis of, [Hill] (38) 1188
skimmed, and food economy, 44
what constitutes good milk, 314—E, [Park] 720—C
MILLING process and beri-beri in war time, 1000—E
MINE, coal, fatalities in 1917, 1245
MINNESOTA medical news, 108, 330, 473, 637, 711, 793, 863, 1016, 1243, 1317, 1551, 1614
Medicine, 316—E
state board April examination, 1629
state board January examination, 1185
MIOSTAGMIN reaction with cancer, [Roffo] (99) 819, [Salvesen] (127) 1272
MIOTIC drugs, action on eyes with incomplete sphincter iridis, [Curdy] *1992
MIRROR phobia, [Martiri] (77) 201
MISSISSIPPI medical news, 108, 1108, 1317, 1780
state board October examination, 1028
MISSOURI medical news, 180, 403, 551, 637, 793, 863, 1016, 1243, 1317, 1388, 1479, 1551, 1614, 1780, 1960
state board December examination, 722
state board March examination, 1971
state board September examination, 875
MITOCHONDRIA in experimental poliomyelitis, study of, [McCann] (48) 268
in red blood corpuscles during experimental anemias, [Sappington] (28) 1891
MONEY extorted to protect reputation, right to recover, 1884—Ml
MONILIA vaccine in sprue, [Michel] (79) 193, (43) 486
MONOMYOPLEGIA, traumatic, [Mally & Corpechot] (71) 133
MONTANA medical news, 181, 863, 1317, 1479, 1615
state board April examination, 1871
state board October examination, 1028
MONTEREY, Mexico, Medical School, 803
MONTREAL Board of Health, 639
MORPHIN and apomorphin, absorption of, from bladder and urethra, [Macht] (62) 1189
and reaction time, 1868—E
poisoning, abnormal reflexes caused ~~by, in tabetic, [Osnato] [1315~~
MORTALITY, influence of national~~ity on, 463—E~~
Statistics: See Statistics, Vital
MOSQUITOES and malaria, remedies relative to, 1631—Ml
vegetable powder as larvicide in fight against, [Thibault] *1215
MOSS method of determining isohemagglutination groups, [Sanford] *1221
MOTHER Noble's Healing Syrup, 719—P
MOTHERS, refectories for, [Allaria] (71) 201
social problems affecting children and, [Bar] (42) 1572
MOUTH, detection of syphilis by examination of, [Railliet] (61) 132
gag, [Allport] *768
gag and tongue-depressor, [Moyer] *680
MOUTH, gonococcus infection of mucous membrane of, [Mayhew] *1223
streptococcus oral sepsis, complement fixation test and value of routine blood examination in, [Potter & others] (56) 487
trench, [Bowman] (57) 1120
MOVEMENTS, associated, after war wounds, [Roncoroni] (38) 275
MOVING PICTURE entitled "Fit to Fight," 1166
MULFORD — Influenza Serobacterin Mixed, 1968—P
MUMPS: See Parotitis
MUNITION, optic atrophy and multiple peripheral neuritis developed in manufacture of explosives, (binitrotoluene), [Hamilton & Nixon] *2004
workers, hours of work for, 253
workers, pustules on, [Thibierge] (18) 1402
MUSCLE, atrophy of, following nerve section, cause of, [Stevens] *835
atrophy of, of central origin, [Salomonson] (92) 895
contraction of, voluntary, effects of organ extracts on, [Rogers & others] (15) 343
dystrophy, endocrine origin of, [Janney & others] (37) 650
dystrophy, progressive, [McCrudden] *1216
effect of epinephrin on blood flow in, [Gruber] (19) 808
electric reeducation of, [de Lisi] (57) 659
progressive dystrophy, chemical changes in blood and urine in, [McCrudden & Sargent] (11) 650
progressive dystrophy, pathologic process in, [McCrudden] (42) 650
reaction of degeneration in, [Hesnard] (56) 132
retraction, bone resection for, [Thévenet] (48) 575
strength and symmetry of, in human beings, [Martin] (15) 1978
strength of college women, [Mosher & Martin] *140
MUSEUM and war archives, at Val-de-Grâce, 2045
MUSIC, influence of, on electrocardiograms and blood pressure, [Hyde & Scalapino] (12) 1566
MUSKRAT, edibility of, 852—E
MUSTARD gas, [Rendu] (62) 1507
gas, pathology of skin lesions produced by, [Warthin & Weller] (66) 1980
gas, pathology of, 1947—E
oil, cutaneous irritation by, as influenced by various solvents, [Sollmann] (42) 1892
MUTTON bird (sooty petrel) oil, [Purdy] (11) 889
MYALGIA, diagnosis of, at the front, [Chavasse] (5) 419
subnormal temperature in, [Kent] (41) 60
MYCETOMA in Argentina, [Solari] (101) 967
MYCOSIS of hands and feet, [Strandberg] (119) 136
MYIASIS of bladder, [Mendez] (101) 1641
MYOCARDITIS, chronic, [Christian] *1909
chronic, studies of, [Christian] 1886—ab
MYOMA, pedunculated, on gravid uterus, [Platero] (84) 894
MYOMECTOMY or hysterectomy, [Bonney] (2) 1192
MYOPIA, progressive course of, [Blegvad] (115) 1344
MYOSITIS ossificans traumatica, [Orr] 1889—ab
progressive ossifying, [Caronia] (68) 1340
MYRTOL and eucalyptol poisoning. [Parker] 1887—ab
MYXOSARCOMA of temporal bone with extension into posterior cranial fossa, [Elsberg] (58) 2055

N

NARCOTICS: See Drugs, Habit-Forming
NASAL reflex neuroses, [Hofvendahl] (113) 1578
NASOPHARYNX, cerebral neoplasm proving to be carcinoma of, [McKendree] (95) 1501
secretions of, diseases spread by, face mask and other precautions against, 96—E
NATIONAL Army, Medical Corps of, commissions in, 1490
NATIONAL Army, Medical Corps of, orders to, 1009, 1102, 1270, 1309, 1383, 1473, 1545, 1610, 1773, 1952
Association for Study and Prevention of Tuberculosis, campaign for new members, 332
Association for Study and Prevention of Tuberculosis to meet, 110
Board of Medical Examiners, next examination of, 913
Board of Medical Examiners, recognition of examination of, 1091
Conference of Social Work, meeting of, 1179
Education Association, war educational meeting of, 1618
Guard Division of Medical Reserve Officers, announcement of staff officers, 1270
licensure for physicians in federal service, [Brown & Lowe] 480—C
Medical Institute of Mexico, 332, [Terres] (75) 423, 1179
social unit organization, 101
Tuberculosis Association, meeting of, 1319, 1553, 1961
NATIONALITY, influence of, on mortality, 463—E
NAVY, commutation and insurance in, 2018
medical directors promoted to rear admirals, 33
medical notes, 785
medical service of, 1963
medical students serving in, 1321
needs binoculars, spy glasses and telescopes, 393
needs more Medical Reserve Officers, 1006
Nurse Corps, bill for, 698
problems of medical officer of, [Odell] 563—ab
retirements in Army and, 252
NEBRASKA medical news, 403, 637, 863, 1317, 1615, 1960
state board May-June and July examinations, 722
state board November examination, 722
NECK, operation on base of, entrance of air into mediastinum during, [Buford] (111) 1636
projectiles in head and, [Patel & Arcelin] (79) 1899
NECROSIS of skull, electric burn causing, [Lewis] (16) 935
NEEDLE, curved, simple method of making, [James] 1788—C
for suturing with wire, [Soresi] (75) 133
NEGATOSCOPE, [Bois] (32) 574
NEGRO mother, diet of, in New York City, [Hess & Unger] *900
infant mortality, 167—ab
NEO-ARSPHENAMIN, profound toxemia after administration of, [Miller] *594
serious results following administration of, [Ross] *153
supply of, 1027
NEODIARSENOL: See Neo-Arsphenamin
NEPHRITIS, acidosis of, immediate cause of death in, [Whitney] (23) 125
acute, albuminuria after, [Péhu & Daguet] (34) 815
acute, and other diseases, as injuries by accident, 879—Ml
acute, studies in, [Mason] (38) 650
acute, with spirochetes in urine, [Sisto] (87) 64
Bence-Jones proteinuria with reference to hypertension and, [Miller & Baetjer] *137
chronic, treatment of, [Williams] 2051—ab
diagnosis of, [Epstein] 1976—ab
etiology of, [Hunt] 2050—ab
impetigo contagiosa as cause of, [Stiell] (26) 1571
pathology of, [Williams] 2050—ab
syphilitic, [del Sel] (87) 134
trench, clinical and pathologic notes on, [Tytler & Ryle] *998, (22) 1264
trench, eye changes in, [Kirk] (4) 490
war, [Dunn & McNee] (1) 959, [Oliver] (3) 959, [Ceconi] (79) 965, [Laubry & Marre] (37) 1572
war, after-history of, [Robertson & others] (64) 1121
war, new conditions associated with hemorrhages in bladder wall and urinary symptoms, [Peters & Stevens] *1760
NEPHRITIS, war, prognosis in, [Abercrombie] (24) 1895
NEPHROPEXY for floating kidney, [Lloyd] (88) 1894
NERVE, assistance to study of tissues containing, [Cone] *156
catching of, in fracture, and failure to use roentgen ray, 726—Ml
direct implanting of, in muscle, [Doi] (90) 1130
flow of lymph in, experiments bearing on, [Alford & Schwab] (81) 886
grafting, autoplastic, [Ingebrigtsen] (52) 575
laryngeal, effect of trauma on, [Judd & others] (25) 1119
laryngeal, recurrent paralysis of, associated with mitral stenosis, [Brown & Hempstead] *4, [Carrau & Nuñez] (83) 894
musculospiral, treatment of lesion of, in military surgery, [Dunn] (4) 1331
optic, atrophy and multiple peripheral neuritis developed in manufacture of explosives, [Hamilton & Nixon] *2004
optic, atrophy, primary unilateral, in child, following fracture of skull, [Brav] *1595
perineal, resection of, for vulvovaginal pruritus, [Mauclaire] (8) 272
peripheral, injuries to, and treatment, [Moynihan] (124) 58
peripheral, internal topography of, [Hoessly] (45) 1404
peripheral, primary tumors of, [Tomiselli] (76) 660
peripheral, surgery of, [Hesnard] (41) 1265
peripheral, trophic disturbances in gunshot injuries of, [Stopford] (11) 1400
phrenic and cervical sympathetic, influence on thyroid of anastomosis of, [Marine & others] (15) 808
prostheses, 1877
radial, lesions of, after war wound of upper arm, [Ruggi] (35) 350
sciatic, eosinophilia after resection of, [Loewenthal] (63) 491
sciatic, graft of, [Le Jemtel] (52) 575
section, cause of muscular atrophy following, [Stevens] *835
surgery of, 44
suture of, 1877
suture of, severed by projectiles, [Delorme] (58) 1340
trigeminal, sensory distribution of, [Kraus] *1452
trunks, symptoms from compression of, [Sicard] (51) 738
ulnar, section of, [Galland] (50) 892
wounds, points arising in, [Souttar] (4) 419
wounds, surgery of, 1620
wounds, trophic lesions accompanying, [Duroux & Couvreur] (59) 1340
NERVOUS and mental disease in soldiers, special commission for surveillance of outcome of, 1554
diseases, reconstruction problem as it relates to, [Hutchings] 1928
ischemia and obliteration of arteries in wounded, [Desplats & Buquet] (58) 1800
system, central, microscopic demonstration of cocci in, in epidemic poliomyelitis, [Hektoen & others] (84) 193
system, development of brain and, in young children, [Collin & Godet] (30) 890
system, sympathetic, deranged functioning of, [Ramond & others] (27) 1224
system, syphilis of, intraspinal treatment of, [Sanz] (91) 497
system, syphilis of, intravenous use of arsphenamin in, [Sachs] 1790—ab
system, vegetative, in typhoid, pharmacodynamic examination of, [Matsuo & Murakami] (35) 1033
NEURALGIA, trigeminal, alcohol in, [Sicard] (64) 61
trigeminal, surgeon's impression of 302 cases, [Frazier] *1345
NEURASTHENIA and allied disorders contracted in army, management of, [Collie] (24) 1637
and shell shock in hospitals in western command, [White] (10) 1570

- NEURASTHENIA, segregation of soldiers with, 1391
  - spasmophiliac, [Campani] (74) 660
  - treatment of, following shell shock, [Williamson] (13) 59
- NEURITIS, from wounds of war, [Sicard] (20) 889
  - peripheral, multiple, and optic atrophy developed in manufacture of explosives, [Hamilton & Nixon] *2004
  - rhinogenous optic, [Malling] (114) 1804
  - subnormal temperature in, [Kent] (41) 60
- NEURO-ARTHRITISM, thyroid instability with, [Lévy] (68) 1574
- NEUROBLASTOMA, congenital, [Hertz & Seaher] (73) 278
- NEUROLOGICAL Bulletin, 475
- NEURO-PSYCHIATRIC centers, [Cruchet] (39) 131
- NEUROSES, differential diagnosis of, [Nägeli] (78) 1196
  - psychoneuroses and hysteria, [Bernheim] (72) 63
  - war, [Terhune] *1369
- NEUROSINE and original package evil, 1251—P
- NEUROTICS in military service, problem of, [Gordon] (89) 653
- NEVADA state board May examination, 2048
  - state board November examination, 187
- "NEW AND NONOFFICIAL REMEDIES" in France, 1783
- NEW HAMPSHIRE medical news, 1615
  - state board June examination, 482
- NEW JERSEY medical news, 473, 711, 1109, 1317, 1780
- NEW MEXICO medical news, 1017, 1317, 1479
  - state board January examination, 1256
  - state board October examinations, 722
- NEW YORK City, development of cooked food service in, 475
  - City Health Department, 1539—E
  - City Health Department, proposal to abolish various bureaus of, 1231—E
  - health insurance bill, opposition to, [Davin] 1115—C
  - health of, in 1917, 683—ab
  - medical news, 42, 108, 181, 251, 330, 403, 473, 551, 637, 712, 794, 863, 941, 1017, 1109, 1177, 1244, 1317, 1388, 1479, 1551, 1615, 1781, 1873, 1960
  - sanitary code, amendments to, in 1917, 1070—ab
  - state board March examination, 2048
  - State Board of Charities, work of, 390—E
  - state board report, 1256
  - Tribune advertising principles, 1558—P
- NEWSPAPERS, medical advertising in, 1300—E
  - on Red Cross and antivivisectionists, 238—E
- NICOLAI, G. F., imprisoned in Germany for publishing book, 252
- NITRATE ions, action of iodid, bromid and, on respiratory center, [Macht & Hooker] (90) 887
- NITROGEN metabolism and acidosis after transplantation of ureter into duodenum in dogs, [Goto] (31) 1259
- NOBLE, ROBERT E., Brigadier-General, 1607
- NORMAL Horse Serum, 1159
- NORTH CAROLINA medical news, 42, 181, 712, 1018, 1389, 1480, 1552
- NORTH DAKOTA medical news, 331, 551, 1109, 1480
  - public health service, 257—ab
  - state board January examination, 1256
- NORTH Pacific Surgical Association, meeting of, 43
- NOSE, celluloid in correction of deformities of, [New] *988
  - fractures of jaw and, in war, [Hedlund] (118) 820
  - leishmaniosis of, [de Rezende] (90) 1802
  - lesion of, in cocain addicts, [Turtur] (38) 2058
  - prosthesis for, [Veyrassat] (65) 494
  - reoperation of incomplete submucous resection of nasal septum, [Mosher] *843
  - restoration of, [Pont] (28) 273
  - saddle, correction of, [De Flines] (128) 1046
  - splint for, [Stein] *224
- NOSTRUMS: See also Patent Medicines; Proprietary Medicines
- NOSTRUMS, evil of, in Canada, 407—P
  - in restrospect, 185—P, 337—P, 478—P, 642—P, 949—P, 1251—P
  - manufacture of, one non-essential industry, 1539—E
  - misbranded, 1183—P
  - sensitiveness of those who inherit fortunes made in *nostrum* business, 1540—E
  - shotgun, 642—P
- NOVARSENOBILLON, icterus gravis following injections of, 2 fatal cases, [Fenwick & others] (4) 1795
- NOVOCAIN and procain identical, [Steiglitz] 1969—C
  - and veronal to be manufactured in United States, 43
- NURSES, American, citation of, 1784
  - and war, [Brown] *1438
  - army, needed, 1618
  - army, who have contracted pulmonary tuberculosis, hospitalization of, 1784
  - bill for Navy Nurse Corps, 698
  - Corps of Army, regulations for, modified, 98
  - for navy needed, 1553
  - liability of private hospital for theft by, and attacks by strangers, 1029—Ml
  - military, cross of Legion of Honor for, 1877
  - needed by Red Cross, 1768—E
  - physicians testifying as to services of, 562—Ml
  - public health, and tuberculosis, [Heizer] (96) 733
  - training school for, in Costa Rica, 1180
  - Washington conserves its supply of, for civil population, 1388
- NURSING, army school of, 1874 1949
  - classes in, for patriotic women, [Shaw] 49—C
  - trained, need of campaign to arouse interest in, [Mason] 1882—C
- NUTRITION, abdominal sign of, in infants, [Gismondi] (60) 659
  - adequate, and cost of living, 1600—E
  - and deficiency diseases, [Pol] (85) 202
  - cost of adequate, 312—E
  - fundamental requirements of energy for, [Lusk] *821
  - general reduction in weight from undernourishment, [Frets] (99) 579
  - insufficient, among school children, 1257—ME
  - methods used in class for undernourished children, [Smith] (1) 2053
  - of Amsterdam school children, [Lubsen] (98) 579
- NUTS as food supply, [Morris] 1324—C
- NYSTAGMUS, experimental, [Argañaraz] (88) 1641
  - recording of, [Struycken] (102) 1510

O

- OBESITY and coxa vara, [Kirmisson] (25) 1265
  - and food, 694—E
  - Marmola for, 1163—E
- OBSTETRICS: See also Labor
- OBSTETRICS, arm and leg holders for use in, [Wulff] (106) 580
  - graduate degree in gynecology and, [Litzenberg] 1976—ab
  - pituitary extract in, [Marchand] (80) 1509
  - supersitions in, [Titus] 1493—ME
- OCCUPATIONAL DISEASES: See Industrial Diseases
- OHIO medical news, 181, 251, 712, 794, 941, 1018, 1109, 1178, 1244, 1389, 1480, 1552, 1616, 1781, 1960
  - reciprocity report, 722, 1256
  - state board June examination, 51
- OIL boils of shell turners, 1247
  - inunction in prevention of plague, suggestion of a century ago, [Dickinson] 1787—C
  - mutton bird, [Purdy] (11) 889
  - pustules of munition workers, [Thibierge] (18) 1402
- OKLAHOMA medical news, 1018, 1244, 1318, 1616
  - state board January examination, 1185
  - state board October examination, 260
- OLD AGE, kidney function in, [Rappeye] (51) 652
  - manifestation of, 389—E
  - premature, after puerperal fever, [Turenne] (85) 894
- OLEOMARGARIN, tax on, 164—E, [Leffmann] 480—C, [Belknap] 802—C
- OLIVE OIL not essential, 696—E
- OPHTHALMIA, gonorrheal, [Montaño] (58) 351
  - neonatorum, prophylaxis of, 481
  - sympathetic, enucleation in, [Mansilla] (114) 1045
- OPHTHALMOLOGICAL Society of the United Kingdom, meeting of, 332
- OPHTHALMOLOGISTS and public affairs, 1876
- OPHTHALMOLOGY in medical course, [Uribe y Troncoso] (74) 423
  - medical problems connected with draft from standpoint of, [Wilder] 805—ab
- OPHTHALMOPLEGIA, infective, outbreak of, 1619, 1876
  - toxic, epidemic of, [Hall] (15) 1796
  - unilateral, due to carotid aneurysm, [Viets] (61) 1569
- OPIUM, action of, on digestive tract, [Macht] (8) 191
  - alkaloids, chemical structure of, and action on smooth muscle and on pharmacologic and therapeutic properties of some benzyl esters, [Macht] 1790—ab
  - requirements of physicians issuing prescriptions for, 804—Ml
- OPTIC Nerve: See Nerve, Optic
- OPTICAL industry organized for war service, 1874
- OPTOCHIN: See Ethylhydrocuprein
- OPTOMETRY law unconstitutional, 483—Ml
  - not practicing medicine, 727—Ml
- ORCHARD White, 1024—P
- ORCHIS EXTRACT, 1786—P
- OREGON medical news, 182, 1244, 1781
  - state board January examination, 1491
- ORGAN EXTRACTS: See also under names of Individual Organs, i. e., Pituitary Body
- ORGAN EXTRACTS, effects of, on contraction of voluntary muscle, [Rogers & others] (15) 343
- ORPHANS of physicians, asylum for, in Spain, 1553
- ORTHOPEDIC centers of Great Britain and their American medical officers, (34) 884
  - outlook in military surgery, [Jones] (1) 572
  - surgery at Shepherd's Bush Hospital established by Sir Robert Jones, [Kidner] *1201
- OSTEITIS deformans, repair after surgical operations, [Abbe] *371
- OSTEO-ARTHROPATHY, [Munk & Greve] (105) 1342
- OSTEOCHONDRITIS after pleurotomy, [Thévenet] (50) 575
- OSTEOMALACIA, [Selhorst] (116) 967
- OSTEOMYELITIS, acute, [Sanders] 1331—ab
  - chronic war, [Rocher] (33) 656
- OSTEOMYELOMA, multiple, with albumosuria, [Martiri] (81) 495
- OSTEOPATHY, physicians and practice of, 190—Ml
  - versus chiropractic, evidence of not being licensed physician, 190—Ml
- OTITIS complicating pleural empyema in children, [Notari] (76) 578
  - intracranial enterococcus complication of, [Caliceti & Vaglio] (43) 275
- OUR Standard Remedy, 1183—P
- OVARY, conserved, end-results of, [Polak] 1975—ab
  - cyst of, giant, [Pages] (102) 1198
  - cyst of, hemorrhage into, simulating ectopic pregnancy, [Waters] *295
  - function of, effect of hysterectomy on, [Richardson] 1885—ab
  - hemorrhage of tubes and, etiologic relation to pelvic hematocele and extra-uterine pregnancy, [Bovée] 1975—ab
  - unilateral defect of tube and, study in prenatal pathology, [Gellhorn] (11) 192
- OWEN and Dyer bills for increased rank and authority of Medical Reserve Officers, 539—E, 542—E, 626—E, 628—E, [Seaman] 1252—C
  - bill, amendment to, 853
- OXALATES, action of citrates, tartrates and, study in tolerance, cumulation and effect of diet, [Salant & Swanson] (50) 1261
- OXALURIA and diazo reaction, [Phocas] (86) 1129
- OX-BILE, inhibitive effect of, on typhoid bacilli, [Ecker] (49) 486
- OXIDATION, mode of action of food in increasing, [Burge & others] (18) 1332
  - normal mechanism for control of, in body, [Burge & Neill] (18) 1978
  - reduced, effects of, 2029—E
  - reduced, morphologic changes in tissues of rabbit as result of, [Martin & others] (70) 1036
- OXYGEN deficit in venous blood, 696—E
  - determinations on 5 patients with compensated circulatory disturbances, [Lundsgaard] (76) 652
  - determinations on 5 patients with incompensated circulatory disturbances, [Lundsgaard] (77) 652
  - in disease of stomach, [San Martin & Barillas] (94) 1576
  - subcutaneous injections of, in balanitis gangraenosa, [Sutton] *675
  - unsaturation in venous blood with circulatory disturbances, [Lundsgaard] (75) 652
- OYSTERS, green, 93—E
- OZENA, bacteriologic findings on, [Ward & Beaver] (81) 1121
  - vaccine treatment of, [Glogau] (73) 1980
- OZONE, reliability of, in swimming pool disinfection, [Manheimer] *1991

P

- PACIFIC Medical College, 1020
- PACKERS Product Company declared a fraud, 1786—P
- PAD, abdominal, rubber envelope, [Bissell] *677
- PAGENSTECHER thread, Barbour's linen flax thread as substitute for, [Tracy] 1787—C
- PAGET'S Disease of Bones: See Osteitis Deformans
- PALATE, cleft, and harelip, [New] (70) 488
- PALESTINE, relief units for, 943.
- PALMYRA fiber as suturing material in place of silkworm gut, [Srinivasamurti] (29) 1193
- PALPATION for determination of maximal pressure, [Baumann] (61) 200
- PANACEA, medieval, 1605—E
- PAN-AMERICAN Medical Congress, Eighth, to meet at Buenos Aires, 1319
- PANCREATECTOMY, effect of, on catalase content of tissues, [Kennedy & Burge] (19) 125
- PANCREATITIS following resection of stomach, [Urrutia] (112) 1198
  - in typhoid, [McCrae] 1791—ab
  - subacute, treatment of, [Watts] 414—ab
  - syphilitic, [Udaondo] (79) 424
- PAPAVERIN, injections of, in experimental syphilis, [Macht & Reasoner] (58) 269
- PAPAW, food value of, 31—E
- PAPAYANS, BELL, 557—P
- PAPER, price of, in France, 1320
- PARACENTESIS, pneumopericardium following, report of case, [Stewart] *1222
- PARAFFIN bath, hot, for infected war wounds, [Soresi] (74) 1508
  - film dressing for wounds, [Robert] (63) 1194
  - film treatment after mastoid operation, [Daure] (48) 1573
  - paper as surgical dressing, [Harpster] *1763
  - sprayer for, in treatment of burns, [Stanley] 1489—C
  - treatment of burns, [Hull] (4) 196
- PARALYSIS after war wounds, [Pitres] (23) 273
  - agitans and myopathic dystrophy in uncle and nephew with internal glandular dyscrasia in latter, [Osnato] (17) 486
  - agitans, unilateral, [Juarros] (89) 741
  - and contracture of feet, [Roussy & others] (28) 1337
  - bone transplantation in surgical treatment of paralytic feet, [Fuld] (18) 955

PARALYSIS, bulbar, acute, [Nicolaysen] (115) 1804
  facial, chronic peripheral, operative treatment of, [Sharpe] *1354
  from disuse, [Hartenberg] (67) 61
  from injury of spinal cord without lesion of dura, 1620
  from shell air shock, [Gatti] (67) 1267
  functional, and contracture, [Claude & Lhermitte] (48) 738
  general, [Bambaren] (82) 496
  general (exhaustion pseudoparesis), fatigue syndrome, simulating early paresis developing under intensive military training, [Hunt] *11
  general, intracranial treatment of, [Cotton & Stevenson] (63) 1569
  general, permeability of meninges to arsenic in tabes and, [Barbat] *147
  general, personality in, [Osnato] *434
  general, results in treatment by inunctions of mercury and drainage of cerebrospinal fluid, [Finlayson] (7) 1977
  general, spinal fluid in, [Sicard & Roger] (25) 1798
  in hemiplegia, Swedish movements in, [Oden] *828
  infantile: See Poliomyelitis, Acute Anterior
  Jacksonian paresis, [Meige & Bénistry] (55) 815
  left recurrent, and mitral disease, [Carrau] (31) 890, [Carrau & Nuñez] (83) 894
  of intestines, pituitary treatment of, [Kirmisson] (33) 891
  of leg, prothesis to correct, [Boschi] (71) 1340
  of recurrent laryngeal nerve associated with mitral stenosis, [Brown & Hempstead] *4
  pneumogastric, respiratory disturbances in, [Vernet] (26) 1124
  spastic, surgery of, [Gill] (9) 1890
  traumatic, alternate, [de Castro] (73) 1268
PARAMENINGOCOCCUS and meningococcus, [Dopter & others] (38) 198
  in eastern front, [Bloch & Hébert] (46) 1040
  septicemia, protracted, [Aimé & Chéné] (31) 1125
PARAMNESIA, reduplicative, [Elander] (11) 1344
PARANEPHRITIS, suppurative, following tonsillitis, 2 cases, [Botteselle] (78) 965
PARAPLEGIA, cure of, from rupture of posterior vertebral ligament, [Perez] (100) 966
  from gunshot or other injuries of spinal cord, treatment of, [Robson] (9) 419
  leukemic infiltration in spinal cord as cause of, [Bassoe] (58) 1334
PARATYPHOID and typhoid vaccination of native troops from New Caledonia, 1320
  B, [Etienne & Mondelange] (45) 962
  bacilli in stools, preservation of, by emulsifying in glycerin, [Benians] (32) 961
  prophylactic triple inoculation against typhoid and, [Dreyer & others] (15) 1400
  surgical complications of typhoid and, [Johnson] (16) 130
  toxin produced by B. paratyphosus B, effect and nature of, [Ecker] (70) 127
PARESIS: See Paralysis, General
PARIS letter, 44, 111, 254, 334, 405, 476, 554, 639, 714, 796, 866, 944, 1021, 1111, 1180, 1247, 1320, 1391, 1483, 1554, 1620, 1784, 1876
PAROTID, bilateral enlargement of, and war edema, [Park] (3) 1637
  hypersecretion in, [Escalada & Jorge] (96) 1641
PAROTITIS and meningitis, [Kaunitz] *1448
  disease of internal ear with, [Heilskov] (102) 426
  iridocylitis accompanying, [Weve] (107) 1342
  lead, chronic, [Comby] (53) 815
  suppurating, of malarial origin, [Moreau] (48) 198
PARTIAL-TENSION plates, simple and reliable method of making, [Cohen] *84
PARTURITION: See Labor
PASTEUR Institute, establishment of, 1116
PATELLA, function of, [Hoessly] (46) 1404
  physiologic segmentation of, [Reinbold] (58) 199
  slicing, 1769—ab
PATENT law, 95—E, 115—P
  law and Secretin-Beveridge, 95—E, 115—P
  law, need for revision, 118—P
  laws, our archaic, 95—E
PATENT MEDICINE: See also Nostrums; Proprietary Medicines
PATENT MEDICINE, 433—ab, 1141—ab
  situation, [Street] (10) 415
  unrighteous profits in, [Harris] 2047—C
PATTEN, George F., cited for bravery, 1467
PAUL'S tube for colon operations, [Cumston] (46) 575
PAUPERS, tuberculous, providing for treatment of, at special institutions, 1257—Ml
PEACOCK'S bromides, 643—P
PEANUTS as food, 850—E, [Daniels & Loughlin] (57) 956, [Williamson] 1396—C
PEDICULUS humanus vestimenti, methods of control of, [Moore] (70) 886
PEKELHARING, testimonial to, 1111
PELLAGRA, chemical analyses of stomach contents from 100 pellagrins, [Givens] (4) 955
  diets producing, biologic analysis of, [McCollum & Simmonds] (58) 956
PELVIS, fracture and dislocation of, management of, [Gazzotti] (47) 350
  new incision for exposure of lower abdomen and, [Churchman] (22) 956
PENNSYLVANIA medical news, 109, 182, 251, 331, 403, 474, 552, 638, 713, 794, 864, 941, 1019, 1109, 1178, 1244, 1318, 1389, 1481, 1552, 1617, 1781, 1873, 1960
  state board January examination, 1326
  state board July examination, 645
PENNYROYAL leaves, inferior, 992—ab
PEORIA epidemic due to contaminated water, 695—E
PERICARDIAL knock, [Smith] (11) 572
PERICARDITIS, traumatic, due to needle, case of, [Hall & Wilson] (24) 130
PERICARDIUM, adhesions between diaphragm and, [Trémolières & Caussade] (61) 1574
PERIGASTRITIS, dyspepsia from, [Araya] (7) 1406
PERINEUM, lacerations of, immediate operation for, [Bernstein] *1217
PERIOSTEUM and formation of bone, [Leriche & Policard] (49) 1639
PERITONEUM, Dakin's solution in normal peritoneal cavity, [Mann & Crumley] *840
  membranes and false membranes in, [Escribano] (60) 1128
PERITONITIS, drainage by femoral route for, after war wounds, [Allegra] (64) 659
  ether in, and other infections, [Haines] 415—ab
  pneumococcus, [Syms] (26) 1119
PERONEAL tendon as a transplant, [Henderson] *1456
PERSIL misbranded, 1183—P
PERSIMMON, 259
PERSONALITY in paresis, [Osnato] *434
PERTUSSIS: See Whooping Cough
PESTHOUSE, board not liable for injury to patient escaping from, 1565—Ml
PHALANGES, fractures of, continuous elastic traction in treatment of, [Vincent] 1325—C
PHARMACIST in Army Medical Department, [White] 1562—C
PHARMACO-ETHNOLOGY, [Dominguez] (115) 1642
PHENALGIN and Ammonol, 337—P
PHENOLPHTHALEIN, compatibility of, 950
PHENOLSULPHONEPHTHALEIN, antiseptic properties and renal excretion of compounds related to, [Davis] *581, [Davis & White] (33) 2055
PHENYLCINCHONINIC acid, U.S.P., 1599
PHILIPPINES, mortality phenomena in, 2030—E
  medical practices in, 1374—E
PHLEBITIS, septic, due to gunshot wounds, [Burrows] (36) 1895
PHLEBOTOMUS fever, [Hartley] (4) 1570
PHOSPHORUS, effect of, on growing normal and diseased bones, [Phemister] *1737
PHRENOPERICARDITIS, [Trémolières & Caussade] (61) 1574
PHTHISIOLOGY, chair of, at Edinburgh University, 1020
PHTHISIS: See Tuberculosis, Pulmenary
PHYSICAL deterioration of boys under war conditions, 1876
  examination in army, revision of regulations for, 169
  examinations, yearly, argument for, from findings of one local board, [Hurd] 52—ME
  training versus universal military training, 95—E
PHYSICIANS: See also Medicine
PHYSICIANS, accounts of, itemization required of, 1258—Ml, 1881—Ml
  American, in England, 113
  and aviation service, 1098—E
  and military service bill, 1482
  asylum for orphans of, in Spain, 1553
  Belgian and French, contributions for, [Keen] 338—C, 873—C, 1116, 1788—C
  British, another appeal to, 1233—E
  British, wanted for army, 1391
  call for medical officers, 1098—E, 1162—E, 1228—E
  civilian, decoration of Legion of Honor awarded to, for services in war time, 2045
  compensation of, construction of provision as to, 481—Ml
  cooperation of insurance companies and, in promotion of public health, [Muhlberg] 261—ME
  deaths of, abroad, 43, 110, 475, 639, 714, 795, 1111, 1180, 1245, 1320, 1390, 1618
  deaths of, in 1917, 28—E
  decorated for bravery, 1467, 1552, 1607
  distinguished service awards for medical officers, 1006
  domination of medical profession by commercial interests, 1767—E
  entitled to damages for eviction or trespess, 1972—Ml
  examined by state boards during 1917, 1074
  for army, 2043
  for what he may and may not keep intoxicating liquors, 340—Ml
  imprisoned in Germany for publishing book, 252
  in army service, assignment to home cities of, 1554
  in danger in China, 332
  in Spain, organization of, 1245
  in Spanish parliament, 1553
  interest on account of, from verdict only, 727—Ml
  Italian, accomplishments of, in war, [Heiser] *24
  itemizing of account and application of payments, 1258—Ml, 1884—Ml
  liability for representations and negligence or incompetence of, 1972—Ml
  liability of company and, under contract for medical services, 2049—Ml
  mobilization of medical profession in New Zealand, 714
  not answering call, liability of employer for, 1492—Ml
  one's former physician his medical examiner, 804—Ml
  organization of medical profession for war, [Bevan] *1805
  partial loss of sight in one eye by, 264—Ml
  power of assistant engineer and others to employ, 879—Ml
  promoted by Pershing, 33
  registered through reciprocity by state examining boards during 1917, 1092
  requirements of, issuing prescriptions for opium, 804—Ml
  response of, to military duty, [Crile] 239
  right to recover money extorted to protect reputation, 1884—Ml
  sufficient provision and notice as to medical attendance, 953—Ml
  value of services is question for jury, 2049—Ml
  victim of aerial bombardment in Paris, 714
  war and, 112
  wife's separate estate obliged to pay for medical services, 1187—Ml
  wounded in action, 628, 1101, 1166, 1307, 1467
PHYSIQUE, national, [Keith] 1020
PHYSOSTIGMIN, antagonistic action of atropin and, [den Bexten & Sluyters] (111) 66
PIA MATER, pigment cells in, [Katsunuma] (97) 741
PIGMENTATION and heliotherapy, [Jeanneret & Messerli] (59) 199
PINEAL GLAND, calcification in, [Boaz & Scholz] (24) 343
PITUITARY body, anatomy of, [Woerdeman] (94) 1130
  body and diabetes insipidus, [Lereboullet] (74) 1268
  body and polyuria, [Houssay & Romaña] (96) 966, 1321
  body in epileptics, [Munson] (17) 1398
  body in relation to loss of memory and inability to concentrate the attention, [Basile] (56) 422
  body, tumors of, [Houssay & Segura] (100) 1044
  extract, annular dystocia and, [Colistro & Platero] (86) 894
  extract, control of polyuria in diabetes insipidus by, [Rosenbloom] *1293
  extract, effect of, on action of kidney under strain, [Addis & others] (16) 1978
  extract in obstetrics, [Marchand] (80) 1509
  extract, influence of, on daily output of urine, [Rees] (16) 1332
  extract, new method for biologic standardization of, [Spaeth] (40) 1892
  extract, regulation of urea excretion by, [Addis & others] (13) 1978
  feminism, adenoids with, [Citelli & Calicetl] (72) 1508
  insufficiency, [Lafora] (89) 1043
PITYRIASIS, tuberculin in, [De Grado] (86) 1509
PLACENTA, desiccated, effect of ingestion of, during first 11 days of lactation, [McNeile] (4) 1118
  infarcts in, [Morinelli] (80) 202
  transmission of creatinin and creatin by, [Hunter & Campbell] (30) 1567
PLAGUE, active immunity to systemic plague infection, [Eberson] (80) 193, (44) 486, (24) 574
  measures against, in Holland, [van Andel] (101) 1510
  oil inunction in prevention of, suggestion of century ago, [Dickinson] 1787—C
  pneumonic, 943, 1482
  pneumonic, in China, 1111
  prophylaxis of, [Valdes] (83) 1576
  pseudo-tuberculosis, [Dessy] (90) 1509
  swine, in man, [Svith] (133) 1200, [Thomsen] (124) 1272
PLANTAIN flour for convalescents, [de Figueroa] (113) 967
PLANTS poisonous for cattle, [Flores & Houssay] (100) 819
PLAUT-VINCENT'S ANGINA: See Vincent's Angina
PLEURA friction sounds, propagation of, [Wallgren] (125) 136
  infection of, with chest wounds, [Roux-Berger & Policard] (62) 1194
  projectiles in, [Ceresole] (70) 578
  siphon sterilization of, [Costantini & Vigot] (56) 963
  wounds of lungs and, [Moynihan] (125) 58, [Roux-Berger] (66) 1897
PLEURISY, black, [Galliard] (21) 2057
  in tillers of soil, [Braillon] (76) 817
  interlobar, [Destefano] (108) 819
  penny sign of, [Lereboullet] (78) 817
PLEUROTOMY, osteochondritis after, [Thévenet] (50) 575
PNEUMOCOCCUS, attempt to determine type of, in sputum, and rapid method for production of precipitin antigen from bacteria, [Krumwiede & Noble] (44) 731
  carriers, disinfection of, [Kolmer & Steinfield] *14
  determination of type of, as practiced in field with Avery's new cultural method, [Vaughan] *431
  determination of type of, by Avery's cultural method, [Beckler & others] *836
  determination of type of, in lobar pneumonia, [Avery] *17
  determination of type of, in sputum in lobar pneumonia, [Krumwiede & Valentine] *513
  determination of type of, rapid me [illegible] of, [Mitchell & [illegible]

PNEUMOCOCCUS, differentiation of types of, rabbits as substitute for white mice in, [Faber] *1459
  infection, experimental, chemotherapy of, [Kolmer & Steinfield] (38) 1634
  invasion in meningococcus meningitis, [Netter & Salanier] (29) 656
  meningitis, [Mallié] (57) 1573
  partially autolyzed, in lobar pneumonia, [Rosenow] *759
  peritonitis, [Syms] (26) 1119
  rapid immunity to, method for production of, [Alexander] (58) 810
  serum, production of, and corresponding curves obtained by production and agglutination tests, [White] 1497—ab
  virulent, and pneumonic lungs, toxic substances from, and influence of quinin and urea hydrochlorid, ethylhydrocuprein hydrochlorid and other cinchona derivatives, [Cohen & others] (37) 1634
PNEUMONIA, [Miller] 564—ab
  active immunization against, [Kohn & others] 1496—ab
  after goiter operations, [Arnd] (37) 274
  and empyema at Camp Zachary Taylor, [Hamburger & Mayers] *915
  antipneumococcic serum, potency of, [Wayson & McCoy] *1747
  at base hospital, [Cole & MacCollum] *1146
  bacteriologic study of, occurring at Camp Pike, [Dick] *1529
  classification and results of treatment of, at Camp Upton [Cecil] 728—ab
  elimination of chlorids in, [Guião] (81) 1986
  epidemic of measles and, at Camp Wheeler, [Duncan] (70) 732
  face mask and other measures in prevention of, [Weaver] *76, 96—E
  heart in soldiers with bronchitis or, [Morelli] (48) 422
  lobar, accompanying typhoid, nature of mononuclear cells in exudate of, [Forman & Hugger] (13) 1033
  lobar, acute, [Shattuck & Lawrence] (37) 809
  lobar, acute, ethylhydrocuprein in, [Moore & Chesney] (26) 1891
  lobar, common colds as possible source of contagion for, [Valentine] (47) 268
  lobar, determination of type of pneumococcus in, [Avery] *17
  lobar, determination of type of pneumococcus in sputum in, [Krumwiede & Valentine] *513
  lobar, partially autolyzed pneumococci in, [Rosenow] *759
  lobar, prophylaxis of, [Kolmer & Steinfield] (75) 957
  lobar, protective inoculation against, 1163—E
  migrating, in children, [Lozano] (88) 1043
  postoperative, bacteriologic study of, [Olmstead] 1496—ab
  prevention and treatment, 382—T
  reaction following antipneumococcic serum, [Friedlander & Runnels] (75) 1189
  special board to investigate, 1607
  streptococcus and pneumococcus groups, [Cumming & others] *1066
  toxicity of pneumonic lungs, [Weiss & others] (36) 1634
PNEUMOPERICARDIUM following paracentesis, report of case, [Stewart] *1222
PNEUMOTHORAX, artificial, [Larralde] (83) 579
  artificial, anatomic effects on lung of, [Burnand] (62) 494
  artificial, improved method for refilling in, [Gammons] *843
  artificial, in bilateral cases of pulmonary tuberculosis, [Gammons] *675
  artificial, in pulmonary tuberculosis, [Morgan] (43) 61
  artificial, in pulmonary tuberculosis, results in private and dispensary practice, [Greer] *1518
  in nontuberculous lung abscess, [Tewksbury] *293
  lung cavity simulating, [Zandren] (97) 662
  spontaneous, double, case of, [Marshak] *1518
PNEUMOTOXIN, skin reaction to, [Weiss] 1496—ab
POLIOMYELITIS, antipoliomyelitic serum in, its protective and curative properties, [Nuzum & Willy] (79) 957
  arterial pressure in children paralyzed from, [Souques] (18) 348
  characteristic sign of, 1916 epidemic of, [Heiman] (23) 55
  comparative study of, [Bristol] (55) 810
  comparative studies of cocci isolated from, [Heist & Cohen] (43) 570
  epidemic, agglutination of pleomorphic streptococcus isolated from, by immune serum, [Rosenow & Gray] (41) 1260
  epidemic, elective localization of streptococci from, [Rosenow & others] (40) 1260
  epidemic, etiology of, [Rosenow & Wheeler] (39) 1260
  epidemic, immune horse serum in 58 cases, [Rosenow] (42) 1260
  experimental, [Kraus & Kantor] (98) 819
  experimental, active immunity in, [Abramson] 1328—ab
  experimental, mitochondria in, [McCann] (48) 268
  hydrocephalus of, [Regan] (2) 1398
  isolation and cultivation of globoid bodies in, [Heist & others] (41) 570, [Smillie] (65) 1036
  microscopic demonstration of cocci in central nervous system in, [Hektoen & others] (84) 193, (48) 486
  operation in selected cases of long standing causes return of power in paralyzed muscles, [Riely] (12) 1633
  opsonic action of poliomyelitic serum on organisms isolated from fatal cases of, [Cohen & Heist] (42) 570
  paralysis left by, [Hoessly] (44) 1404
  Rosenow's antipoliomyelitic serum in, experiments with, [Amoss & Eberson] (82) 652
  second epidemic of, in Sweden, 1911-1913, [Wernstedt] (128) 136
  skin and throat manifestations of, [Regan] (34) 344
  somnolence with, [Tilney] (85) 811
  survival of poliomyelitic virus in brain of rabbit, [Amoss] (73) 1036
  vaccination against experimental, [Abramson] *1142
  work in South Africa, 1319
  work of committee on, 481—ab
POLLEN antigen, antipollen serum for standardization of, [Clock] (46) 486
POLYCYTHEMIA in tuberculosis, [Barlaro] (93) 1044
  vera, roentgen rays and benzene in, [Hurwitz & Falconer] *1143
POLYMYOSITIS, bacteriologic findings in, [Landsteiner] (132) 66
POLYNEURITIS, syphilitic, [Villapadierna] (96) 579
POLYURIA and pituitary body, [Houssay & Romaña] (96) 966, 1321
  control of, in diabetes insipidus by means of hypophysial extract, [Rosenbloom] *1292
POMELO, or grapefruit, 1537—E
PORTO RICO Medical Society, meeting of, 252
  October examination, 875
  roll of honor of, 1320
POST OFFICE Fraud Order against Dr. Chase Company, 1557—P
  Fraud Order issued against Packers Product Company, 1786—P
POTASSIUM and sodium iodids in roentgenography, [Cameron & Grandy] *1516
  aqueous solutions of sodium iodids and, as opaque mediums in roentgenography, [Cameron] *754
  bromate, effect on enzyme action, [Falk & Winslow] (46) 1188
  iodid intravenously, [Simon] (51) 815
  versus sodium, 1601—E
POTATO and bran bread, 721
  flour biscuits, [Van Leersum] (113) 820
PRECIPITIN antigen, production of, from bacteria, [Krumwiede & Noble] (44) 731, [Krumwiede] 1329—ab
PRECIPITIN, specific, in gonococcal infections, [Watabiki] (33) 570
  test for blood, [Hektoen] 1273
PREGNANCY, acute edema of uterine cervix in, [Knoop & van Dongen] (93) 1130
  albumosuria of, [Tanberg] (110) 742
  and lactation, 1769—E
  and pulmonary tuberculosis, [Norris & Landis] *362, [Walsh] (29) 883
  and tuberculosis, [Douglass & Harris] 21—ab, [McSweeny & Wang] *368
  blood sign of, [Fahræus] (101) 1900
  chloroform, ether and nitrous oxid-oxygen in labor and, [Davis] (88) 571
  diagnosis of, [Hermosa] (68) 423
  diagnosis of, from urine, [Koopman] (40) 1403
  extra-uterine, bilateral, [De Rosas] (104) 1198
  extra-uterine, etiologic relation of tubal and ovarian hemorrhage to pelvic hematocele and, [Bovée] 1975—ab
  extra-uterine, hemorrhage into ovarian cyst simulating, [Waters] *295
  extra-uterine, ruptured, blood transfusion and pulmonary embolism with, [Shier] (43) 1793
  extra-uterine, treatment based on 100 cases, [Rongy] (11) 342
  hygiene, instruction and supervision of expectant mothers in New York City, [Sobel] (121) 347
  in uterus didelphys, [Mazzini] (116) 1045
  influence of, on progress, development and recurrence of cancer, [Bainbridge] (3) 342
  mechanical ileus in, [Bovin] (119) 66
  mechanical obstructions to, methods for overcoming, [Morris] (15) 883
  multiple, triplets twice in one year, [Hornstein] *224
  perforation of gallbladder in, [Van Os] (116) 820
  Prochownick diet in, 644
  rectal exploration in diagnosis of labor and, [Arteaga] (104) 819
  tetany in labor and, [Guggisberg] (68) 495
  toxemia of, indications for interference in, [Dice] (9) 342
  toxemias of, treatment of, [Davis] (8) 342
  triplet, cancer of cervix complicating, [Watson] 1976—ab
  vomiting in, feeding in, [Bacon] *1750
  vomiting of, serotherapy for, [Melgar] (45) 2059
PRESCRIPTION A· 2851 for Rheumatism, 1025—P
  an incompatible, 410
  Harrison law registry number on, 721
  metric system for Army prescriptions, 802
PRISONERS, American, interned in Germany, 1006
  exchange of, between Italy and Austria, 1020
  German brutality to, 867, 1482
  in Germany and Austria, treatment of, a Russian account, 1542
  interchange of, 1541
  missing medical officer reported as, 1467
  unsecured or honor loans to, 334
PRIVILEGE, waiving of, 954—Ml
PRIZES, award of, 555
  awarded by Académie de Médecine at Paris, 183
  awarded by Paris Faculty of Medicine, 1554
  awarded by Spanish Academy, 1245
  Carnegie Hero, for civilians, 1874
  for work on biochemical causes of cancer, 795
  for work on physical science, 1180
  Léon Labbé, 112
  list of, awarded and offered by Académie, (17) 348
  open to Spanish-American physicians, 1783
  Swedish Association, to Giertz, 332
PROCAINE, 779, 1599
  and novocain identical, [Stieglitz] 1969—C
PROCHOWNICK diet in pregnancy, 644
PROFESSION, Medical: See Medicine; Physician
PROFLAVINE, action of, [Morgan] (33) 961
  and acriflavine, in infected gunshot wounds, [Carslaw & Templeton] (45) 1895
PROHIBITION in Peru, 1110
PROPRIETARY medicines, [Bethea] 376—ab
  regulation of sale of, [Léger & others] (37) 492
PROSTATE, adenomas of, with vesical calculus concealed by sessile pedunculated median lobe, [Lydston] *1297
  diseases, bacterial vaccine therapy in, [Bumpus] *213
  enucleation of growth, [Rosenwald] 1889—ab
  hypertrophied, [Cinaglia] (71) 659
  hypertrophied, tests of kidneys with, [Bie] (129) 1200
  nongonorrheal disease of, [Barragan] (77) 424
  prostatism without enlargement of, [Seres] (73) 1405
  tunneling, [Luys] (21) 1123
PROSTATECTOMY, [Borchgrevink] (112) 742
  end-results of, comparative analysis based on 110 cases, [Martin] *1287
  partial performing of, unwarranted, 263—Ml
  perineal, study of vesical orifice following, [Watson] (56) 269
  recurrence of urinary obstruction after, [Denslow] *441
  suprapubic, suture after, [Pauchet] (48) 658
  two-stage, [Graham] (99) 958
PROSTHESES for war cripples, 1111
PROTEINS, blood, studies on, [Meyer & others] (38) 486
  causation of eczema, urticaria and angioneurotic edema by proteins other than those derived from food, [Walker] *897
  digestion products, form in which absorbed, 92—E
  foreign, intravenous injections of, in acute arthritis, [Cecil] (24) 125
  hypersensitiveness to, and kidneys, 1298—E
  intradermal reactions to, of infants with gastro-enteric disorders, [Greer] (17) 55
  metabolism, influence of mechanical work on, during height of meat digestion in dog, [Atkinson] (35) 1188
  of blood plasma, 389—E
  of cow's milk, [Osborne & Wakeman] (58) 417
  therapy in eye diseases, [Andersen] (111) 1344
PROTEINURIA, Bence-Jones. 541—E
  Bence-Jones, association of amino-aciduria with, [Simon] *224
  Bence-Jones, occurrence of, with reference to nephritis and hypertension, [Miller & Baetjer] *137
PRURITIS ani, calomel for, [Hamburger] (110) 1510
  vulvovaginal, resection of perineal nerves for, [Mauclaire] (8) 272
PSEUDOHERMAPHRODITISM, [Lollini] (69) 894
PSEUDOLEUKEMIA: See Hodgkin's Disease
PSEUDOTABES, traumatic, [Mendicini] (50) 1126
PSORIASIS in army, treatment of, [Barber] (6) 1503
PSYCHASTHENIA, treatment of, following shell shock, [Williamson] (13) 59
PSYCHIATRIC clinic in army, [Damaye & Crinon] (74) 63, [Cruchet] (39) 131
  examination of recruits, [Stearns] *229
PSYCHOLOGICAL Healing Institute, 871—P
PSYCHONEUROSES and irritable heart of soldiers, [Oppenheimer & Rothschild] *1919
  emotive, 2 cases of, [de Fleury] (48) 1191
  genito-urinary, [Uteau & Sauvage] (62) 1340
  neuroses and hysteria, [Bernheim] (72) 63
  therapeutic exercise in, [Soesman] (96) 425
  war, [Mott] (14) 1263

PSYCHONEUROSES, war, predisposing factors of, [Wolfsohn] *303, (14) 735
PSYCHOPATHIC hospital, commitment to, as related to question of personal liberty, [Dewey] *292
PSYCHOSES: See also Insanity; Neurasthenia; Neuroses; Psychoneuroses
PSYCHOSES associated with diabetes, [Singer & Clark] (85) 418
  of malaria, [Porot & Gutmann] (37) 1799
  postoperative, [Tramer] (82) 1196
  war, in camp, [Van der Hoeven] (129) 1046
  war, occurring in cases with definite history of shell shock, [Eager] (1) 1570
PSYCHOTHERAPY in chronic internal diseases, [Yarotzky] (106) 65
PTOMAIN poisoning and accident insurance, 997—ab
  poisoning vs. food-borne infections, 462—E
PUBERTY, precocious, [Krabbe] (102) 580
PUBLIC gatherings, prohibiting, to prevent spread of disease, 726—Ml
  Health Day, National, [Anders] 1561—C
  Health Service, bill to transfer it to Department of Interior, 865
  Health Service conference to be held in Washington, 1553
  Health Service, new assignments in, 465
  Health Service, report of Surgeon-General of, 262
  Health Service, vacancies in, 784
PUERPERAL INFECTION, arsphenamin in, [Miller & Chalfant] 1975—ab
  Chalfant]
  date of, paper by Oliver Wendell Holmes on, 116
  premature senility after, [Turenne] (85) 894
PULMONARY Tuberculosis: See Tuberculosis, Pulmonary
PULSE, alternating, and digitalis, [Carpentier] (34) 1571
  photographic record of, [Casares] (92) 1803
  rate and blood pressure as aid in head traumas, [Sieber] (7) 568
PUPIL, dilatation of, from auditory stimulus, [Van Ravenswaalj] (124) 1199
PURINS in cow's milk, 784—E
  ingested, excretion of, in chronic gout, [illegible] *285
  [illegible] produced [illegible]t, [Watabiki] (79) 353
  hemorrhagic, after quinin, [Samaja] (64) 1267
  hemorrhagic, epidemic, [Giugin] (79) 1640
PUTREFACTION, coal-tar creosote oil in checking of, and repelling of flies, 1005—E
PYELITIS in children, [Wieland] (83) 817, (67) 964
  infectious, [Le Clerc] (43) 198
PYELONEPHRITIS following war wounds, [Uteau & Schwab] (54) 494
PYELOTOMY for kidney stones, [Presno] (100) 1198
PYLORUS stenosis, hypertrophic, in 2 year old child, [Scott] *1913
  ulcer of, value of pyloric exclusion in, [Lewisohn] (14) 1890
PYOCYANEUS bacillus vaccine omitted from N. N. R., 1486—P
PYONEPHROSIS, bacillus typhosus associated with, [Ruediger] *367
PYXOL, 559

Q

QUARANTINE, power to, 124—Ml
QUARTERS, commutation of, for officers, 627—E, 1006, 1101, 1232—E, 1255, 1490
  commutation of, in Navy, 2048
QUININ acid hydrobromid intravenously in malaria, [Knowles] (9) 1637
  and aspirin, incompatibility of, 481
  and urea hydrochloride, 1227
  dihydrochloride, 1227
  hemorrhagic purpura after, [Samaja] (64) 1267
  how to administer, [MacGilchrist] (23) 60
  in malaria, prophylactic use of, [Treadgold] (1) 1981
QUININ in urine, test for, [Bauer & Revelliet] (52) 1573
  influence of quinin and urea hydrochlorid, ethylhydrocuprein hydrochlorid and other cinchona derivatives on toxic substances from virulent pneumococci and pneumonic lungs, [Cohen & others] (37) 1634
  subcutaneous injection of, in malaria, [Pende] (65) 201

R

RABBITS as substitute for white mice in pneumococcus type differentiation, [Faber] *1459
RABIES: See Hydrophobia
RACHICENTESIS, headache following, cause of, [McRobert] *1350
  in children, [Raventos] (95) 818
  in headache with meningeal reaction, therapeutic action of, [Bambaren] (52) 351
RACHITIS, [Gismondi] (64) 1405
  and premature infants, [Huenekens] (60) 56
  cardiorespiratory syndrome in, [Garcia] (88) 966
  developing at 13, [Ricklin] (62) 200
  diet of negro mother in New York City with reference to, [Hess & Unger] *900
  historical case of, [Burland] (31) 1571
  in soldiers, [Léri & Beck] (60) 1897
  roentgen aspects of, [Weil] (63) 1507
RADIOACTIVE balances, [Zwaardemaker] (100) 1510
  substances, commission for, 1964
  water, equipment to produce, [Laborde] (69) 817
RADIOACTIVITY, new physiologic aspects of, 849—E
RADIOGRAPHY: See Roentgenography
RADIUM, action of, on hematopoietic system, phases of, [Millet & Mueller] (63) 1979
  and roentgen rays in cancer, biologic and clinical evidence of therapeutic value of, [Levin & Levine] (47) 1500
  in cancer of larynx, [Botey] (107) 1641
  in cancer of lip, [Janeway] *1051, [Scott] 1255—C
  in cancer of lower genito-urinary tract, [Young & Frontz] (55) 269
  in cancer of tonsil, [Lannois & Moutet] (26) 273
  in fibroid tumors, [Kelly] 1976—ab
  in gynecology, [Condamin & Nogier] (61) 1507
  in uterine hemorrhage and uterine fibroids, [Miller] (105) 1636
  influence of heat and, on induced immunity against transplanted animal tumors, [Rohdenburg & Bullock] (64) 1979
RAT-BITE DISEASE, [Grenet & Lehucher] (44) 1506
  mercurial treatment of, [Borelli] (63) 739
  new species of spirochete isolated from case of, in Bombay, [Row] (15) 1192
  new species of streptothrix isolated from, [Litterer] (127) 271
  subacute, [D'Halluin & Fiévez] (47) 1639
RATIONS, compulsory, 1112
RAYNAUD'S DISEASE, [Rubin] (130) 654
  and hemoglobinuria, [Castex & Queirel] (78) 1406
RAYS: See Roentgen Rays
REACTION time, delayed, as causes of aero accidents, 783—ab
  Tuberculin: See Tuberculin Reaction
  Wassermann: See Wassermann Reaction
RECIPROCITY applications, uniformity of, [Dodds] 648—ab
RECONSTRUCTION: See under Soldiers
RECREATION centers for soldiers, 796
RECRUITS: See also Registrants
RECRUITS, army cardiovascular examinations, classification of abnormalities with reference to rejection, acceptance or special service of, [Butler] *844
  comparison of draft rejections, 753—ab
  examination of, [Harris] *157
RECRUITS, examination of, letter to constituent organization of American Medical Association, [Work] 1321—C
  interpretation of Schick reaction in, [Zingher] *227
  lessons from draft examination of, [Fisk] *300
  medical officer wrongfully passing, for enlistment, 1493—Ml
  medical problems connected with draft from standpoint of Appeal Board, [Harris] 806—ab
  medical problems connected with draft from standpoint of internist, [Irons] 805—ab
  medical problems connected with draft from standpoint of ophthalmologist, [Wilder] 805—ab
  medical test for, new departure in, 253
  physical examination of, [Lopez] (77) 353
  psychiatric examination of, [Stearns] *229
  regulations on physical examinations for selective service, 695—E
  tuberculosis and correctable defects in drafted men, [Sawyer] *308
RECTOSIGMOID, study of, [Mayo] (127) 58
RECTUM, cancer of, [Desmarest] (64) 1574
  cancer of, palpation with, [Desmarest] (26) 736
  cancer of sigmoid and, complete intestinal obstruction from, [Haggard & Floyd] 1330—ab
  ether-oil anesthesia by way of, [Kohltzoff] (64) 277
  feeding by, plan of, [Cornwall] *1451
  physiology of, [Friedel] (29) 1505
  sigmoidoscope in diagnosis of disease in terminal colon and, [McWhorter] *1365
  wounds of, 1021
RED CROSS, American aid through, Henry P. Davison on, 1321
  American, and air raids, 1247
  American, and Society of Men of Letters, 866
  American, date of organization, 1116
  American, gift from, 1964
  American, in France, 555
  American, in Italy, 465
  American, opens tuberculosis hospital in France, 43
  American, service of, 1391
  American, work of, 1463—E
  and antivivisectionists, newspapers on, 238—E
  appropriation for research, medical officers in France approve of, 169
  appropriation for research, opposition to, 168—E
  festa, 252
  information regarding soldiers in training camps, 465
  Institute for Crippled and Disabled Men, [McMurtrie] 186—C
  Institute for Crippled and Disabled Men, bibliography of war cripple issued by, 317
  International, future of, 1112
  needs medical men abroad, [Lambert] 1949
  relief work at Guatemala, [Hoagsdon] 1184—C
  train, American, first constructed in England, 253
  work in Cuba, 555
RED streak, sign of disease, [Tracy] (52) 1120
REFLEXES, abnormal, caused by morphin poisoning in tabetic, [Osnato] *1815
REFUGEE trains, 2045
REGISTRANTS: See also Recruits
REGISTRANTS, examination of, [Harris] *157
  in Group B, remedying remediable defects of, 1608 [Crowder]
  physical causes for rejection of, 171
  physical examination of, 316—E, 317
  suggestions for detecting heart lesions in, [Schulman] 1489—C
REMINGTON, Joseph Price, death of, 43
RENAUT, J., death of, 405
RENNE'S Pain Killing Oil, 408—P
RENO, Colonel, body of, recovered, 1307
REPRODUCTION, effect of diets on, 2011—ab
RESEARCH and medical teaching after war, [Clark] 1885—ab
RESEARCH, experimental, in general, [van Rijnberk] (109) 135
RESPIRATION and carbon dioxid capacity of blood, 924—E
  artificial, in asphyxia neonatorum, [Heald] *1063
  crippled, and military service, [Labbé & Arié] (44) 1639
  stimulation of, by sodium cyanid, [Loevenhart & others] (28) 343
RESPIRATOR, artificial, [Dudley] *21
RESPIRATORY and circulatory systems and anaphylaxis in relation to cause of death, [Petz & Jackson] (52) 1568
  center, action of iodid, bromid and nitrate ions on, [Macht & Hooker] (90) 887
  center, effect of lactic acid on, [Cohen] (41) 1892
  tract, distribution of meningococci in, of carriers, [Herrold] *82
  tract, foreign bodies in, medicolegal aspect of, [Freire] (92) 1197
RETINA, atrophy of, symptom of, [Vogt] (68) 964
  hemorrhage of, bacterial toxin as cause of, [Lewis] *1813
REVISTA de Pediatria, new medical journal, 555
RHEUMATIC Remedy, Abbott Bros., misbranded, 1624—P
RHEUMATISM, acute articular, treatment of, [Lyter] (87) 57
  acute, with chronic heart disease, [Josué & others] (47) 1800
  lumbar, chronic, [Léri] (51) 1339
RHINITIS: See Colds
RHODE ISLAND medical news, 404, 864, 1109, 1179, 1318
  state board April examination, 1629
  state board January examination, 645
  state board July examination, 120
  state board October examination, 188
  state board report, 120
  state board September examination, 875
RIB, cervical, simulating Pott's disease, [Renault & Romme] (32) 890
RICKETS: See Rachitis
RINGWORM epidemic presenting new type of fungus, [Paul] (9) 348
ROCKEFELLER Foundation and medical projects, 1602—E
  fund budget, 404
ROCKY MOUNTAIN spotted fever, [Wolbach] (60) 810
ROENTGEN RAY and formation of callus, [Sgobbo] (86) 1900
  Diagnosis: See Roentgenography
  effects of, on antibody production, [Hektoen] (75) 193, (39) 436
  localization of foreign bodies, improved caliper method for, [Kariher & Brown] *678
  pictures in book as evidence, 879—Ml
  transformer, insulation of, 721
  ulcer of scalp, [Belot & Chavasse] (68) 817
ROENTGENOGRAMS, diagnosis of age of fetus by, [Hess] (65) 652
ROENTGENOGRAPHY, aqueous solutions of potassium and sodium iodids as opaque mediums in, [Cameron] *754
  in diagnosis of primary cancer of lung, [McMahon & Carman] (5) 267
  in diagnosis of pulmonary tuberculosis in war time, [Brown] *516
  in France during war, [de Abreu] (80) 1986
  skin ink for, [Finzi] (7) 572
  sodium and potassium iodids in, [Cameron & Grandy] *1516
ROENTGENOTHERAPY, [Weil] (40) 1338
  and benzene in polycythemia vera, [Hurwitz & Falconer] *1143
  and radium in cancer, biologic and clinical evidence of therapeutic value of, [Levin & Levine] (47) 1500
  for brain tumors, present status of, [Nordentoft] (109) 1510
  length of exposure, [Réchou] (41) 1338
  new bases for, [Weil] (45) 892
  of thymus in exophthalmic goiter, [Waters] (8) 54

ROLL OF HONOR, 1604—E, 1644
  keep up your own, 1605—E
ROSE, Mary A., Healing Institute, 872—P
ROSENOW'S antipoliomyelitic serum, therapeutic experiments with, [Amoss & Eberson] (82) 652
ROUMANIA, medical conditions in, [Wells & Perkins] *743
ROUNDWORM ascaris, infection with, 460—E
ROYAL College of Physicians of Ireland welcomes American medical officers, 33
RUBBER envelop abdominal pad, [Bissell] *677
  in hot dressings, [Bouet-Henry] (15) 348
RUBEOLA: See Measles
RUSSELL double sugar medium, triple sugar modification of, [Krumwiede & Kohn] (80) 127
RUSSIA, death rate in, [Binshtok] (106) 741
  problem before medical profession in, [Kisel] (101) 135
  public health administration in, [Winslow] 412—ME
  social medicine in, 310—E

S

SACCHARIN, adulteration with, 1972—Ml
SAILORS and soldiers, insurance for, 317, 2048
  for naval surgeons' aids, preparation of, 393
ST. JOSEPH'S Quick Relief misbranded, 1183—P
SALICYLATES, studies on, and question of salicyluric acid in salicyl urines, [Hanzlik] (87) 194
SALIVARY glands, so-called mixed tumors of, [Forman & Warren] (9) 568
SALOONS in war zone, 1391
SALT, rhythm of retention of, [Vallery-Radot] (29) 1402
  solution, hypertonic, in wounds and ulcers, [Permin] (91) 1987
  solution, intraperitoneal injection of, [Blackfan & Maxcy] (2) 267
SALVARSAN: See Arsphenamin
SANATORIUM diet, monotony of, [Wilson] 258—C
  municipal, functions of, [Slade] 188—ME
  tuberculosis, are they worth while? [Billings & Hawes] (15) 416
SANITATION of dugouts, 1964
  of marine barracks, Quantico, Va., [Mann] *996
SANITY, basis on which opinion may be expressed as to, 954—Ml
SARCOMA and bone cysts, [Platou] (76) 278, (32) 1119
  cells, cultivation of, [Roffo] (92) 818
  fever with, [Schiøtz] (131) 1200
  intra-ocular, [De Salterain] (69) 1129
  melanotic, metastasis of, [Kotzareff] (7) 272
  myeloid, and cystic disease of bone, [Faulds & Teacher] (10) 735
  of joint capsule, [van Rijssel] (112) 66
  of thyroid gland, [Jorge & Arrillaga] (102) 1044
SAUVAGE, Camille, death of, 1321
SCABIES, gas treatment of, [Clayton] (38) 575
  in Amsterdam, 1874
  increasing prevalence of, 112
  plague of, 1227—ab
  sulphuration treatment of, [Railliet] (42) 815
SCALP, replacement of, on denuded dry skull by granulations secured through holes drilled in bone, [Davison] *1368
  roentgen ulcer of, [Belot & Chavasse] (68) 817
SCAR: See Cicatrices
SCARLET FEVER, epidemic of, in Greenland, [Barchalia] (91) 661
  etiology of, [Pryer & Kelley] (71) 886
  heart in, [Florand & Paraf] (46) 1506
  in parturient, [Veraart] (126) 1642
  routine culture in control of, [Smith] 258—C
  serotherapy of, [Kling & Widfelt] (122) 968
SCARLET FEVER, throat and skin in, [Vargas] (83) 965
  treatment with immune human serum, [Weaver] (74) 957
SCARLET RED, effect of, on mice, [Takeuchi] (95) 741
SCHICK TEST: See Diphtheria
SCHILLER, REV. D. R., 871—P
SCHNEIDER, medical inspector, death of, 111
SCHOOL: See also Education, Medical; University
SCHOOL Children: See also Children
  children, development of, [Cassinelli] (88) 579
  children of Amsterdam, state of nourishment of, [Lubsen] (98) 579
  children, undernutrition among, 1257—ME
  hygiene, [Hamburger] (106) 135
  lunches, 1522—ab
  medical, at La Plata, 1962
  medical, at Monterey, Mexico, 803
  medical, early graduation of medical students, 1179
  medical, entrance conditions in, [French] *1058, 1098—E
  medical, in French African colony, 714, 1320
  medical, in Paraguay, 1110
  medical inspection of, follow-up, [Taylor] 1999—ab
  medical inspection of, in Spain, 1482
  medical inspection of rural, [Pahud] (67) 1508
  medical, municipal support of hospitals and, in Cincinnati, 783—E
  medical, problems in administration of entrance requirements to, [Chambers] 485—ab
  medical schools, conference of, 1606
  of physical education for reconstruction aides and medical profession, [Oldenborg] 1881—C
  of preventive medicine at Havana, 1180, 1246
  united service medical, [Dyer] 649—ab
SCIATICA with high blood pressure, [Galtier] (32) 349
SCIENCE in war, 715, [Coulter] 1939
SCLERODERMA diffusa, case in girl of 9, [Goodman] (53) 1334
  with nodules, [Criado] (59) 1128
SCLEROSIS, multiple, clinical and anatomic analysis of, [Lowrey] (3) 883
  multiple, with kymographic studies of tremor, [Hallock] (103) 1501
SCLEROTICS, blue, [Bolten] (109) 1342
SCORBUTUS: See Scurvy
SCORPION stings, serotherapy in, [Villela] (65) 423
SCURVY, antiscorbutic value of milk in infant feeding, [Chick & others] (13) 490
  experimental, influence of grains, other than oats, and specific carbohydrates on, [Pitz] (48) 1188
  experimental, intestinal factors in, 235—E
  infantile, pathogenesis of, [Gerstenberger] (7) 955
  present frequency of, [Thibierge] (36) 198
SEAL, edibility of, 852—E
SEAMEN, hospital treatment of, 713
SEASICKNESS, suprarenal insufficiency in cholera and, [Naamé] (57) 132
SEBACEOUS cysts, removal of, [Cicero] (61) 351
SECRETIN Beveridge and U. S. Patent Law, 95—E, 115—P
  stability of, [Carlson & others] 115—P
SECRETIONS, internal, and muscular dystrophy, [Janney & others] (37) 650
SECRETOGEN, 115—P
SECTARIANISMS in science of healing, as treated in legislative acts and judicial decisions, [Kelly] 648—ab
"SECTS" not for medical service, Surgeon-General's statement on, 1468
SELECTIVE service regulations, report of board, 316—E, 317
SELZER water to clear throat, [Comby] (52) 815
SENILITY: See Old Age
SEPTICEMIA in gunshot wounds, [Anderson & Richardson] (3) 812
SEPTICEMIA, meningococcus, [Netter] (46) 198
  Puerperal: See Puerperal Infection
  streptococcus, [Nobécourt & Gimbert] (17) 272
SERO-AGGLUTINATION, false, [Martiri] (60) 423
SERODIAGNOSIS, immunity and complement fixation, [Blumberg] (53) 1568
  preservation of complement by sodium acetate, [Rhamy] *2000
  rôle of specific fats in, [Warden] (36) 570
SEROTHERAPY and lymphotherapy, [Dezwarte] (46) 1266
  renal, [Berri] (111) 1198
SERUM conserved dressing for industrial wounds, [Williams] (19) 1259
  disease after intrathecal injections of serum, [Rolleston] (17) 130
  disease, relation of circulating antibodies to, [Longcope & Rackemann] (66) 1036
  sickness in cerebrospinal meningitis, [Ker] (18) 130
SERVICE flag, 2047
SEX cells, action of external factors on, [Mohr] (90) 354
SEXUAL offenses bill, 1554
SHAKER COLONY plants, utilizing of, for war purposes, 146—ab
SHERMAN'S Mixed Vaccine No. 40, 1968—P
SHOCK, [Berger & Vignes] (62) 963
  abdominal, initial and progressive stages of circulatory failure in, [Wiggers] (17) 1332
  acidosis in, [McEllroy] *846
  acidosis in hemorrhage, gas infection and, [Cannon] *531
  alterations in distribution and character of blood in, and hemorrhage, [Cannon & others] *526
  catalase in, [Burge & Neill] (17) 808
  circulatory failure due to, and other causes, [Wiggers] *508
  in wounded, [Quénu] (57) 963
  intravenous injection in, [Bayliss] (1) 2056
  Locke's fluid with acacia in, [Delaunay] (71) 1897
  mechanism of, 714
  nervous, [Roger] (38) 1403
  oculocardiac reflex in, 1021, [Dorlencourt] (66) 1195
  postoperative, blood pressure and hemoglobin in, [Polak & Heffter] (119) 959
  pulmonary ventilation in trauma and, 1002—E
  shell, and neurasthenia in hospitals in western command, [White] (10) 1570
  shell, causing paralysis, [Gatti] (87) 1267
  shell, mammary tumor from, [Velyaminoff] (112) 1270
  shell, sphincters with, [Guillain & Barré] (50) 815
  shell, treatment of, 1554
  shell, treatment of, neurasthenia and psychasthenia following, [Williamson] (13) 53
  shell, war psychoses occurring in cases with, [Eager] (11) 1570
  surgical, [Kruglevsky] (97) 1576
  surgical, and related problems, [Sweet] (1) 1792
  traumatic, 1621
  vasomotor mechanism in, 625—E
  wound, initiation of, [Cowell] *607
  wound, nature and treatment of, [Starling & others] *520
  wound, nature of, [Cannon] *611
  wound, preventive treatment of, [Cannon & others] *618
SHOES, high heels, [Quénu & Menard] (10) 272, [Galippe] (36) 492
SHOULDER, dislocation of, recurrent or habitual, [Henderson] *1
SICKNESS, cross-examination allowed as to previous, 1187—Ml
SIGMOID, cancer of rectum and, complete intestinal obstruction from, [Haggard & Floyd] 1330—ab
SIGMOIDOSCOPE in diagnosis of disease in terminal colon and rectum, 251 cases, [McWhorter] *1365
SILVER stains, difference in affinity for, between living and dead bacteria, [Nyfeldt] (99) 662
SINUS disease, influenzal, and epidemic influenza, [Robertson] *1533
  superior longitudinal, injection of citrated blood into, in hemorrhagic disease in new-born, [Berghausen] *514
  superior longitudinal, plastic operation for wounds of, [Ortali] (55) 659
SKIN and throat manifestations of acute anterior poliomyelitis, [Regan] (34) 344
  diphtheria of genitals and, [Mondolfo] (86) 1043
  diseases, allergy with, [Lutz] (35) 274
  diseases in relation to industrial accident and health insurance, [Alderson] *71
  diseases, infection in, [Mackay] (69) 957
  diseases, suppurating, fuchsin in, [Gismondi] (44) 350
  flaps, method of obtaining, in repair of mutilating injuries of hands and feet, [Vivian] (122) 489
  grafting, [Masson] *1581
  healing of, treatment to promote, [Taddei] (78) 1802
  healing of wounds in, law of, [Lumière] (80) 1899
  infection, unusual, due to bacillus mucosus capsulatus associated with bladder drainage after prostatectomy, [Graham] (107) 1191
  ink for radiography, [Finzi] (7) 572
  lesions produced by mustard gas dichlorethylsulphid, [Warthin & Weller] (66) 1980
  loss of water vapor through skin in infants, [McClure & Sauer] (37) 1034
  needle, leaving, in body of patient, 413—Ml
  pathology of, and internal pathology, [de Oyarzabal] (82) 1575
  specificity of intracutaneous absorption, [Smith & Cook] (47) 731
  sterilization of, by mixture of crystal violet and brilliant green, [Bonney & Browning] (5) 2056
  wounds, stitch for closing, [Roberts] *157
SKULL: See also Brain
SKULL, decompression of, for head injuries accompanied by signs of intracranial pressure increased, [Payne] 266—ab
  defects, auto-bone flap for, [Le Fur] (45) 1800
  defects, cartilage grafts for, [Rouhier] (62) 577
  foreign bodies in, [Villandre] (42) 575
  fracture of, [Ordoñez] (86) 1197
  fracture of, followed by primary unilateral optic atrophy in child, [Brav] *1595
  necrosis of, electric burn causing, [Lewis] (16) 955
  plastic operations of, 1876, [Sicard & others] (34) 1982
  repair of, [Villandre] (66) 893
  replacement of scalp on, by granulations secured through holes drilled in bone, [Davison] *1368
  wounds, [Salinari] (46) 276, [Schwartz & Mocquot] (64) 893, [Ricciolі] (49) 1404
  wounds, evolution of disturbances after operative treatment of, [MacAuliffe] (59) 132
  wounds, immediate surgery of, [Speed] (108) 1191
  wounds, loss of tendon reflexes with, [Souques] (26) 1265
  wounds, prolapse of brain with, [Novikoff] (67) 277
  wounds, pulmonary edema after, [Moutier] (52) 1339
  wounds, ultimate outcome of, [Murard] (43) 575
SLEEPING Sickness: See Trypanosomiasis
SLOAN'S Liniment, 1025—P
SMALLPOX at Buenos Aires, [Coni] (115) 1045
  differentiation of chickenpox and, [Tièche] (58) 739
  in London, 1112, 1181, 1217
  prevention of, among selected men, 698
  vaccination, 163—T, 555
  vaccination, responsibility of vaccinator in overcoming rational objections to, [Force & Stevens] (80) 418

SMITH, R. S. S., decorated for bravery, 45
Stephen, banquet to, 639
SMITH BILL for vocational rehabilitation passes House, 1380, 1868
SMOKING and rifle shooting, 1072—ab
SNAKE Oil Liniment misbranded, 1184—P
poison specific precipitating properties of antivenom serum, [Houssay & Negrete] (96) 819
SOAP, treatment of gunshot wounds with solution of soap and water and primary suture, [Haycraft] (14) 572
treatment of wounds at casualty clearing stations, [Dixon & Bates] (13) 130
SOCIAL Hygiene Division of War and Navy Departments Commissions on Training Camp Activities, 1234
medicine in Russia, 315—E
problems affecting mother and child, [Bar] (4) 1572
study, institution of fund for, 1321
welfare investigation, 390—E
SODIUM acetate, preservation of complement by, [Rhamy] *2003
and potassium iodids in roentgenography, [Cameron & Grandy] *1516
bicarbonate, administration of, 410
cyanid in stimulation of respiration, [Loevenhart & others] (28) 343
cyanid, intravenous injection of, as stimulant for respiration, 692—E
gynecardate and chaulmoograte subcutaneously and intravenously in leprosy, 2 years experience of, [Rogers] (10) 1192
iodids, aqueous solutions of potassium and, as opaque mediums in roentgenography, [Cameron] *754
persulphate in tetanus, [Leyva] (126) 58
sulphate,. [Carles] (41) 575
sulphite solution, stock, for endo medium, [Teague] *454
tartrate, toxicity of, influence of diet on, [Salant & Swanson] (88) 887
versus potassium, 1601—E
SOLDIERS: See also Army; Recruits; Registrants; War; Wounds; and under names of various diseases, i. e., Nephritis in Soldiers; Venereal Diseases in Soldiers, etc.
SOLDIERS, abnormally low temperature in, [Merklen] (44) 198
British, health of, 867
burial after battle, [Bosredon] (38) 815
crippled and disabled, national headquarters for rehabilitation of, 1784
crippled and disabled, Red Cross Institute for, [McMurtrie] 186—C
crippled, biography of, 317
crippled, Canadian, reconstruction of, and results, [Todd] 2012
crippled, fitting for occupation, [McMurtrie] 338—ab
crippled, prostheses for, 1111
determination of origin of wounds and diseases of, 1784
disabled, board organized to standardize care of remediable defects, 784
disabled, hospital for reconstruction of, 1101
disabled, interallied conference on, 1963
disabled, problem of, [Jones] (10) 1633
disabled, reconstruction and reeducation of, 1234
disabled, *reconstruction and rehabilitation of, national program for, [Billings] 1924
disabled, reconstruction and rehabilitation of, report of meeting of Section on Miscellaneous Topics, 1924, 2012
disabled, reconstruction and rehabilitation problems as solved in foreign countries, [Wood] 1925
disabled, reeducation and rehabilitation of, section of A. M. A. to consider, 868
disabled, rehabilitation of, 629, 1245, 1380, 1767—E, 1772
SOLDIERS, disabled, social and economic supervision of, [Lakeman] 2014
disabled, Surgeon-General's plans for receiving, transporting and distributing of, from overseas, [Noble] 1926
disease conditions among, in United States, 34, 98, 170, 239, 321, 395, 466, 541, 630, 700, 786, 853, 931, 1007, 1101, 1168, 1235, 1307, 1472, 1543, 1608, 1772, 1868, 1951
disease incidence among, in United States, 240
economic problems of crippled and disabled men, 877—ME
examinations of regiment, United States Army, for nervous and mental diseases, [Bowman] (2) 1977
fatigue in, [Cheyrou] (33) 349
Federal Board for Vocational Education of, [Monroe] 2013
German plan for care, reeducation and return to civil life of disabled sailors and, [Sjögren] *379
health of Americans oversea, as compared with those at home, 239, 320
industrial conservation and reclamation of, [Meck] 2012
insurance for, 317
literature on reconstruction and reeducation of, 927—E
national headquarters for rehabilitation of crippled and disabled soldiers, 2045
reconstruction, acute surgery as related to, [Seelig] 1923
reconstruction aids, 928
reconstruction of defects in hearing and speech, [Richardson] 1930
reconstruction problem as it relates to nervous and mental diseases, [Hutchings] 1928
recreation centers for, 796
Red Cross information regarding, in training camps, 465
reeducation of war blinded, [Bordley] 1931
rehabilitation in foreign countries, results of, [McMurtrie] 2013
schools of physical education for reconstruction aides and medical profession, [Oldenborg] 1881—C
Smith bill for vocational rehabilitation passes House, 1380, 1868
special commission for surveillance of outcome of nervous and mental disease in, 1554
vocational training of disabled, and teaching personnel, 1483
SOMMER, B., death of, 1962
SOMNAMBULISM in hysteria and epilepsy, [Bernheim] (34) 1403
SORGHUM cutters, dermatitis in, [Hoffer] (71) 1801
SOUND perception in deaf mutes, [Wright] 49—C
syringe, improvement on Bangs, [Hühner] *154
SOUTH CAROLINA medical news, 182, 638, 942, 1319, 1782
state board June examination, 875
SOUTH DAKOTA medical news, 251, 1109
state board January examination, 1 56
SOUTHERN Surgical Association, meeting of, 110
SOY BEAN, use of, as food, [Osborne & Mendel] (52) 127
SPANISH medical students to study emergency surgery at front, 1245
SPASMOPHILIA and intoxication as factors in epilepsy, [Plantier] (59) 1800
and milk, [Larsson] (133) 66
and neurasthenia, [Campani] (74) 660
familial, [Pincherle & Pollidori] (66) 1985
SPEECH Defects: See also Stammering
reconstruction of defects of hearing and, [Richardson] 1930
SPHENOMAXILLARY-temporal region and face, roentgen findings of, [Villandre] (65) 817
SPIDERS, bites of, [Gougerot] (35) 421
poisonous, [Escomel] (98) 1044
SPINA BIFIDA, anterior, [Roux] (66) 964
occulta, [Brickner] (1) 1498
SPINAL cord, cervical, concussion of, [Claude & Lhermitte] (56) 1800
SPINAL cord, concussion of, [Guillain & Barré] (38) 1892
cord, conglomerate tubercle and combined degeneration of, as complications of visceral tuberculosis, [Bassoe] (16) 1398
cord, dorsal, symptoms after severing of, [Lhermitte] (32) 1403
cord, leukemic infiltration in, as cause of paraplegia, [Bassoe] (58) 1334
cord, paralysis from injury of, without lesion of dura, 1620
cord, treatment of paraplegia from gunshot or other injuries of, [Robson] (9) 119
Puncture: See Rachicentesis
SPINE, cervical, extreme anterior curvature of, death from pressure on larynx by, [Noehren] *680
fracture of, uncomplicated by cord injury, operative treatment of, [Brackett & others] (8) 1890
inability to straighten, result of war traumatism, [Rédard] (37) 350
injuries of, [Ransohoff] 341—ab
tuberculosis, cervical rib simulating Pott's disease, [Renault & Romme] (32) 890
wound, gunshot, laminectomy for, [Hughes] (3) 1192
wound, gunshot, of cervical spine, [Black] 415—ab
SPIROCHAETA icterohemorrhagae, cultural conditions of, [Noguchi] (67) 1794
icterohemorrhagiae in nature, survival of, [Noguchi] (68) 1794
icterhemorrhagiae in organs after intravenous serum treatment, [Kaneko & Okuda] (81) 652
pallida, date discovery was announced, 1116
pallida, Fontana's stain for, 338
pallida, morphology and biology of, [Kissmeyer] (90) 202
pallida, resistance of gonococcus and, 950
pallida, staining for, [Medalia] *914
SPIROCHETES and filtrable viruses, [Kraus] (81) 1406
in kidney, presence of, [Kon & Watabiki] *1522
in urine with acute nephritis, [Sisto] (87) 64
intestinal, in Philippines, [Crowell & Haughwout] (70) 957
new species isolated from case of rat-bite fever in Bombay, [Row] (15) 1192
SPIROCHETOSIS of icterohemorrhagiae type, [Fiessinger & Leroy] (16) 272
without jaundice, [Favre & Mathieu] (22) 1124
SPIROCHETURIA, [Favre & Fiessinger] (36) 131
SPLEEN, distribution and elimination of iron in liver and, in experimental anemia, [Dubin & Pearce] (34) 1259
enlarged, chronically, (malarial?), [VanNuys & Stokes] *2001
enlarged, intravenous injections of mercuric chlorid in treatment of, [Greig & Ritchie] (17) 1192
infarction of entire, diagnosis of, [Nuzum] *282
rupture of, traumatic, [Willis] 341—ab
tuberculosis of, primary, [Sodré] (92) 64
wounds of, [Fiolle] (81) 1899
SPLENECTOMY, changes in blood in splenectomized puppies, [Tachigara & Takagi] (62) 277
effect of, on normal individual and in certain pathologic conditions, [Hitzrot] (13) 1890
SPLENOMEGALY, familial, [de Lange & Schippers] (1) 1398
SPLINT, Liston, use of, admissible evidence, 1492—Ml
SPONDYLITIS, deforming, [Malling] (104) 1510
SPONGES, surgeon not liable for, being left in patient, 2049—Ml
SPOROTRICHOSIS in Brazil, [de Rezende] (67) 1405
SPRUE, [Del Valle & Montoro] (117) 1198
monilia vaccine in, [Michel] (79) 193, (43) 486
tropical, clinical manifestations of, [Wood] 1791—ab
SPUTUM, are all tubercle bacilli found in, virulent? [Corper] *1281
SPUTUM, pneumococcus in, in pneumonia, determination of type of, [Krumwiede & Valentine] *513
tubercle bacilli in, [Pettersson] (116) 136
[illegible] and tele-
[illegible] for, 393
[illegible] protoplasm
[illegible], 873
[illegible] omatic toluidin-blue, [Barron] (58) 1568
for protoplasm of bacteria, [Claudius] (92) 661
method for decolorizing and staining blood films, [Lacy] 1486—C
STAMMERING, [Kennedy] 644—C
STANLEY'S Snake Oil Liniment misbranded, 1184—P
STAPHYLOCOCCUS albus, [Pari] (59) 1984
pyrogenes aureus, fate of, introduced intravenously into actively immunized dogs and of killed bacteria introduced into normal dogs, [Ito] (76) 127
septicemia, [Jiminez] (83) 496
STARCH digestion in infancy and childhood, [Fleischner & Meyers] (13) 1259, 1299—E
STATE board examinations, statistics of, 1095—E
board statistics, addenda to, 1564
board statistics for 1917, 1073
STATISTICS, vital, in Cuba, [Fosalba] (103) 819
vital, in England, for 1916, 1021, 1619
vital, of large cities, 865
STEHMAN, Henry Bachman, [Bridge] 872—C
STEINMANN and Finochietto pin traction stirrup, combination of, [Hawley] *22
STEPHENS' Chemical Eye Salve, 408—P
STERILITY and alcohol, 168—E
female, and diphtheroids, [Stellwagen & Pelouze] *977
in male, treatment by direct vasoepididymostomy, [Lespinasse] *448
new operation for obstructive dysmenorrhea and, [Frank] *985
treatment of, due to retrodisplacement of uterus, [Dorsett] 1888—ab
STERILIZATION of skin and other surfaces by mixture of crystal violet and brilliant green, [Bonney & Browning] (5) 2056
STERN, Miss, appointed professor at Geneva, 1180
STETHOSCOPE, linear, [Tomasinelli] (80) 1341
STILLBIRTHS, syphilis as cause of, [Bartholomew] *289
STITCH for closing skin wounds, [Roberts] *157
STIZOLOBIN, globulin of Chinese velvet bean, stizolobium niveum, [Johns & Finks] (58) 1978
STOMACH acidity and secretion, effects of antacid medication on, [Crohn] (8) 2053
cancer of, [Mayo] (101) 1191
contents from 100 pellagrins, chemical analyses of, [Givens] (4) 955
dilatation of, acute, [Bolo & Gallo] (109) 967
dilatation of, from atony, [Timbol] (27) 1505
disease, treatment of, [Meunier] (66) 61
fistula of, [Nario] (80) 1268
foreign body in, (open safety pin in infant's stomach), [Palmer] 480—C
hemorrhage after typhoid vaccination, [Marie] (36) 1265
hemorrhagic erosion of, repeated vomiting as cause of, [Murata & Hashimoto] (11) 348
hour-glass, operative indications in, [Downes] (136) 195
intragastric conductance, 925—E
oxygen in disease of, [San Martin & Barillas] (94) 1576
pain in active pathologic processes in duodenum or, [Hardt]. *837, 849—E
pain in cases of gastric and duodenal ulcer, [Carlson] (10) 124
pain, pathogenesis of, [de Santa Maria] (90) 741
palpation of, deep, [Pron] (68) 1195
perforation of duodenum and, new diagnostic sign, [Field] (23) 730

- STOMACH, physiology of, [Meyer & others] (32) 1033
  - physiology of; hunger, appetite, and gastric juice secretion in man during prolonged fasting (15 days), [Carlson] (17) 343
  - postural activity of, [Grey] (16) 808
  - resection of intestine and, aseptic, [Gudin] (45) 738
  - resection of, pancreatitis following, [Urrutia] (112) 1198
  - response to foods, determination and significance of intragastric conductance, [Bergeim] (1) 124
  - secretion; appetite and hunger in man during prolonged fasting (15 days), [Carlson] (17) 343
  - secretion; digestive power of gastric juice tested on gelatin tubes, [Ramond & others] (18) 272
  - secretion during fever, [Meyer & others] (32) 1033, 1768—E
  - secretion, excessive, and high chlorid content in blood, [Goyena & Petit] (87) 740
  - secretion, iodometric estimation of hydrochloric acid in gastric juice, [Scheltema] (111) 135
  - surgery of, [Témoin] (38) 492
  - ulcer and liver disease, [Navarro] (77) 1268
  - ulcer, duodenal alimentation in treatment of, [Pages & Ibañez] (93) 1576
  - ulcer, etiologic relation of benign ulcer to carcinoma, [Wilensky & Thalheimer] (29) 956
  - ulcer, gastropylorectomy for, [Pauchet] (39) 492
  - ulcer, internal treatment of, with roentgen "filling defect," [Ohnell] (127) 136
  - ulcer of duodenum and, chronic, surgical treatment of, [Sanders] 1330—ab
  - ulcer of duodenum and, origin of epigastric pains in cases of, [Carlson] (10) 124, [Hardt] *837, 849—E
  - ulcer of duodenum and, results from combined medical and surgical treatment, [Richards] (105) 57
  - ulcer of duodenum and, syphilis as factor in, [Castex] (90) 134, (66) 352
  - ulcer, physiotherapy for, [Carro] (98) 1803
  - ulcer, ruptured, helpful diagnostic sign in, [Willan] (9) 959
  - ulcer, tender point with, [Rossi] (78) 740
  - ulcer, vagotony with, [Ayres] (55) 1127
  - ulceration from poison gases, [Zagari] (77) 1802
- STOMATITIS, ulceromembranous, infectious, and gingivitis, [Bowman] (57) 1120
- STONE-CUTTING industry, health hazards in, 1441—ab
- STOOL: See Feces
- STOVAINE, use of, 259
- STREPTOCOCCI, beneficent, 1603—E
  - bovine mastitis and septic sore throat due to, [Davis] (16) 650
  - carriers, predisposition of, to complications of measles, separation of carriers from noncarriers at base hospital, [Levy & Alexander] *1827
  - elective localization of, from epidemic poliomyelitis, [Rosenow & others] (40) 1260
  - epidemic at Camp Zachary Taylor, [Fox & Hamburger] *1758
  - hemolytic, causing severe infections at Camp Zachary Taylor, [Alexander] *775
  - hemolytic, effect of injection of, on susceptible and insusceptible animals, [Hopkins & Parker] (46) 268
  - in wounds, [Ramond & Vergelot] (43) 1639
  - infections due to, following measles and other diseases, [Irons & Marine] *687
  - oral sepsis due to, complement fixation test and value of routine blood examination in, [Potter & others] (56) 487
  - pleomorphic, agglutination of, isolated from epidemic poliomyelitis by immune serum, [Rosenow & Gray] (41) 1260
  - recovered from sick and wounded soldiers in France, studies on, [Malone & Rhea] (58) 1120
- STREPTOCOCCI septicemia, [Nobécourt & Gimbert] (17) 272
  - viridans, localization of, [Detweiler & Maitland] (49) 268
- STREPTOTHRIX, new species of, isolated from case of rat-bite fever, [Litterer] (127) 271
- STRETCHER bearers no longer attached to combatant units, 639
  - for carrying those with abdominal wounds, [Blondel] (43) 131
- STUART'S Buchu and Juniper Compound, 719—P
  - Calcium Wafers misbranded, 1624—P
- STUDENTS, British, and army, 1490
  - divinity and medical, must register, 1607
  - Italian, in army sent back to study, 943
  - medical, call for, 715
  - medical, early graduation of, 1179
  - medical, exempted from new draft, 1542
  - medical, regulations governing enlistment of interns and, 33
  - medical, strike of, at Cordoba, 1962
  - provisions for, during summer of 1918, 1950
- SUGAR and working power, 851—E
  - in blood: See Blood, sugar in
  - in normal urine, method for determination of, [Benedict & Osterberg] (48) 1567
  - in war time, 1003—E
  - reagents, 1301—E
- SULPHATES in urine, determination of, [Flohr] (86) 353
- SULPHEMOGLOBINEMIA, [Long & Spriggs] (21) 1264
- SULPHURATION treatment of scabies, [Railliet] (42) 815
  - treatment of tinea and vermin in horses, 476
- SUNLIGHT Therapy: See Heliotherapy
- SUPERFETATION, abortion due to, [Gustetter] *20
- SUPRARENALS, epinephrin content of, of thyroid-fed rats, [Kuriyama] (75) 417
  - epinephrin content of, medicolegal study of, [Sampaio] (44) 2058
  - fatal hemorrhage in, in young children, [Friderichsen] (101) 426
  - form of malaria, [Fraga] (97) 1509
  - functions of, recent research on, [Roger] (55) 199
  - hematoma of, [Deluca] (94) 1509
  - hypernephroma of, male characters in woman with, [Guemes] (75) 353
  - insufficiency in cholera and seasickness, [Naamé] (57) 132
  - insufficiency in troops, [Satre] (56) 1194
  - insufficiency, meningeal form of, [Moreno] (96) 1197
  - Substance: See Epinephrin
  - war and, [Ramond & François] (42) 198
- SURGEON-GENERAL, appeal of, for 5,000 additional Medical Reserve Corps Officers, 1165
  - of Army, memorandum for, on medical schools, 1950
  - of Army, report of, 96—E
  - office of, in new quarters, 1467
  - organization of office of, 702
  - statement of, to Adjutant-General of Army in regard to "sects" and medical service, 1468
- SURGEONS, contract, 1116
  - contract, need for, more, [Hazen] 1184—C
  - not liable for sponges being left in patient, 2049—Ml
- SURGERY, acute, as related to reconstruction, [Seelig] 1926
  - American, in 1917, [Finochietto] (96) 1900
  - ante-operative and post-operative blood counts in noninfective surgical conditions, [Meleney] (15) 955
  - bacteriologic control at advanced station, [Rosenthal] (39) 1799
  - military, at advanced station, [Montenovesi] (45) 350, [Viannay] (61) 1194
  - military, blood transfusion in, results of, [Robertson & Watson] (5) 59
  - military, British zone of advance, [de Tarnowsky] *771
- SURGERY, military, conclusions adopted by third Interallied Surgical Conference, (41) 1505
  - military, during 1 year's service in France, [Neff & O'Malley] (141) 195
  - military, during recent offensive, unprecedented results of, [Tuffier] (39) 1039
  - military, fourth Interallied Surgical Conference, (69) 1574
  - military, Interallies Surgical Conference, (39) 737
  - military, laparotomies at advanced post, [Drouin] (63) 816
  - military medicine and, bulletin on, 697
  - military, more efficient treatment of light casualties in military hospitals, [Lee] (71) 1189
  - military, results obtained at advanced surgical unit, 111
  - military, surgical results obtained during last Aisne offensive, 796
  - military, surgical sector of 7th region, [Patel] (33) 131
  - military, transactions of Third Conférence Chirurgicale Interalliée, (41) 1572
  - primitive, of western hemisphere, [Freeman] *443
  - reconstructive, in war time, [Kidner] *1201
  - syphilis and, [Gellhorn] (111) 1894
- SURGODINE, 257—P
- SWAIM'S Panacea, 408—P
- SWAN'S Liver and Kidney Remedy misbranded, 1624—P
- SWAYNE'S Panacea, 408—P
- SWEAT-SHOP system, evils of, [Pinilla] (88) 1197
- SWEDISH Medical Association elects Kraepelin honorary member, 332
  - movements in paralysis in hemiplegia, [Oden] *828
- SWIMMING POOLS, disinfection of, ozone in, [Manheimer] *1991
  - investigations on, at University of Minnesota, [Whittaker] *1901
  - purification of, 1163—E
- SWINDLER, a warning, 43, 475, 1110
  - subscription, arrested, 1782
- SWOBODA'S "Conscious Evolution," 799—P, [Rudis-Jicinsky] 872—C
- SYPHILIS acquired after conception, [Villapadierna] (91) 1576
  - acquired genital, in infant, [Haines] *370
  - acute yellow atrophy in, [McDonald] (10) 572
  - and surgery, [Gellhorn] (111) 1894
  - antenatal, suggested action of chorionic ferments, [Routh] (20) 491, (3) 572
  - as cause of diabetes; relation of Wassermann test and lipoidemia, [Williams] *365
  - auto-inoculation in, [Klauder] 729—ab
  - bladder, [Denslow] *154
  - brain and cord, subdural injections of salvarsanized mercurialized serum in, [Nicholson] (122) 888
  - cardiac, [Moore] (5) 1792
  - cerebrospinal, intraspinal auto-arsphenamized serum therapy of, [Thomas] 1329—ab
  - communication of, to wife an assault, 1029—Ml
  - complicating gonorrhea, [Lumb] (7) 1192
  - congenital, [Covisa] (87) 1043
  - congenital, and mental deficiency, [Higgins] (6) 1498
  - congenital, of kidneys, [Canelli] (63) 1985
  - dental stigmata of, alleged, [Galippe] (56) 61
  - diabetes insipidus in, [Heden] (123) 66
  - experimental, injections of papaverin in, [Macht & Reasoner] (58) 269
  - falling hair as early symptom of, [Pedersen] (130) 1643
  - in Argentina, [Raices] (76) 1129
  - in Brazil, history of, [Rabello] (97) 966
  - in etiology of gastric and duodenal ulcers, [Castex] (90) 134, (66) 352
  - infant mortality and, [Fournier] 1184—ab
  - inherited, acute meningitis in, [Hutinel] (50) 1983
- SYPHILIS, inherited, and paroxysmal vomiting, [Barbier] (29) 1798
  - inherited, basis for tuberculosis of bones, [Caronia & Marinucci] (43) 350
  - inherited, of femur, [Derompa] (29) 890
  - inherited, tardy manifestations of, [Gagliardo] (48) 351
  - liver, [Hoogslag] (99) 895
  - lymphogranulomatosis in, [Melchior] (119) 820
  - mercury treatment of nervous plus renal, [Farmachidis] (77) 965
  - nephritis due to, [del Sel] (87) 134
  - nervous system, does paretic gold sol curve in psychiatric cases always indicate syphilis? [Weston] (7) 883
  - nervous system, intraspinal treatment of, [Sanz] (91) 497
  - nervous system, intravenous use of arsphenamin in, [Sachs] 1790—ab
  - nervous system, of paretic type, margin of error in diagnosis of, [Darling] *1521
  - ocular, treatment of, [Poulard] (68) 61
  - of cornea, [Cosmettatos] (119) 1199
  - oral stigmata of, [Railliet] (61) 132
  - pancreatitis due to, [Udaondo] (79) 424
  - polyneuritis due to, [Villapadierna] (96) 579
  - precipitation reaction in, [Bastegi & Corridi] (68) 1267
  - primary lesion of, [Bodin] (60) 1041
  - reinfections with, [Wallau] (100) 1803
  - serodiagnosis of, [Noguchi] *1157, [Seelman & Noguchi] 1486—C, [Hindman & Reinger] 1561—C, [Seelman] 1879—C, [Rhamy] 1969—C
  - serodiagnosis of, method of facilitating, under war conditions, [Noguchi] *1157, 1252—C
  - serodiagnosis of, substitution of human blood cells by monkey's red blood corpuscles in performing, [Schöbl & Monserrat] (122) 129
  - seroreaction in, mechanism of, [Vernes] (52) 493
  - simulating tuberculosis of joint, [Roberts] *372
  - stillbirths and, [Bartholomew] *289
  - titration of complement for its power to combine in syphilitic system, [Stillians] (31) 2054
  - trauma and localization of primary lesion, [Lacapère & Laurent] (61) 1041
  - treatment of, [Bory] (22) 348
  - tuberculosis and, [von Adelung] *1211
  - unsuspected, statistical study, [McLester] (14) 1033
  - uterine, [Bordarampé] (51) 277
  - visceral, in young infants, [Menabuoni] (72) 1268
  - Von Dungern's indigo test for, [Fujimoto] (45) 731
  - war against, [Agramonte] (115) 1198
- SYPHILODOL, 559, 1485—P
- SYRINGE for aspiration and transfusion, [Larché] (31) 1798
  - hypodermic, self-filling, [Bessesen] *1145

SOCIETIES

A.—Association.
Acad.—Academy.
Am.—American.
Coll.—College.
Conf.—Conference.
Cong.—Congress.
Conv.—Convention.
Dist.—District.
Hosp.—Hospital.
Internat.—International.
M.—Medical or Medicine.
Nat.—National.
Phar.—Pharmaceutical.
Phys.—Physician.
Ry.—Railway.
S.—Society.
Surg.—Surgical, Surgeon or Surgery.

- Ala. State M. A., 1242, 1479
- Am. A. of Immunologists, 1323
- Am. Gynecological S., 1885, 1975

Am. Pediatric S., 1782
Am. Phys. A., 1482, 1790, 1886
Calif. State M. S., 1549
Chicago Institute of M., 550, 862, 1030
Chicago M. S., 550, 563, 793, 805, 1939
Colombia M. Cong., 1180
Cong. on M. Education, Public Health and M. Licensure, 484, 556, 648
Conn. State M. S., 1550
Cuba Nat. Cong. of Phys., Dentists, Pharmacists, and Veterinarians, 555
Cuban Nat. M. Cong., 1246
Cuban Triennial Nat. M. Cong., 110
Fla. State M. S., 1388, 1550
French A. of Surg., 405
Ga. M. A., 1872, 1958
Ill. State M. S., 250, 1614, 1779
Internat. Surg. S., 865
Interallies Surg. A., 943
Ia. State M. S., 1176, 1614
La. State M. S., 1316, 1751
Lond. General Council of M. Education and Registration, 112
London Royal S. of M., 1876
Md. M. and Chirurgical Faculty, 711, 1177, 1316
Medico-Chirurgical Reunion of the Third French Army, 1877
Medico-Chirurgical Reunion of the Fourth French Army, 554
Mexican Nat. M. Cong., 865
Mich. State M. S., 1614
Military Surg. A. of the U. S. Army in France, 880
Miss. State M. A., 1780
Mo. State M. A., 1388, 1615, 1888
Nat. Tuberculosis A., 1961
N. H., M. S., 1615
N. Y. State M. S., 1615, 1976
N. Y. State Women's M. S., 1615
Neb. State M. A., 1615
N. C. State M. S., 712, 1480
Okla. State M. A., 1616
Paris Acad. of M., 44, 112, 183, 274, 476, 714, 796, 944, 1120, 1217, 1248, 1320, 1794
Paris Acad. of Sciences, 714, 866, 1022
Paris, Medical S. of the Hosp., 112, 476, 866, 1183, 1620, 1961
Paris Society of Biology, 679, 1229
Paris S. of Comparative Pathology, 476
Paris S. of Neurology, 866, 1554, 1876
Paris S. *of Public Medicine and* Sanitary Hygiene, 1964
Paris Surg. S., 111, 334, 405, 554, 944, 1021, 1247, 1248, 1620, 1621 1877
Porto Rico M. S., 252
Royal S. of M., London, 333
Southern Surg. A., 110, 266, 341, 414
State M. Board; Federation of the United States 637
Swedish M. A., 332, 379
Tenn. State M. A., 942, 1330, 1496
Tex. State M. A., 1389, 1617
Union of Italian Phys. for Nat. Resistance, 464
Union of Medical Syndicates of France, 796
Va. M. S., 252
Western Surg. A., 264, 341, 414

T

TABES DORSALIS, [Grossman] (79) 886
  abnormal reflexes caused by morphin poisoning in, [Osnato] *1815
  amaurosis due to, [Espejo] (53) 351
  gastric crisis in, [Carnot & Bruyère] (48) 815
  permeability of meninges to arsenic in paresis and, [Barbat] *147
  sacral, with clinical picture of lesion of conus medullaris, [Hassin & Carroll] *755
TACAMOCHO epidemic, [Henao] (90) 1044
TACHYCARDIA, classification of, [Martinet] (48) 493
  in enteric and other fever, [Marris] (9) 2056
  orthostatic, [Leven] (52) 1266
  paroxysmal, [Bard] (27) 1638
  paroxysmal, of ventricular origin, [Willius] (24) 268
  paroxysmal, 6 cases of, [Hume] (23) 1264
TACHYCARDIA, paroxysmal; study with reference to tachycardia of ventricular origin, [Vaughan] (34) 1033
  war, [Aubertin] (49) 892
  war, etiology of, 476
  war, frequency of infectious antecedents in, [Crouzon & Mauger] (48) 1040
  war, with high blood pressure, [Aubertin] (32) 1338
TALIPES, paralytic, correction of, [Guaccero] (32) 2058
  planus, [Gosman & Perry] (67) 487
TALLQVIST scale, 3 drop method of determining hemoglobin by, [Weidmann] 1563—C
TANLAC testimonial and death notice, 718—P
  testimony from tombs, 1114—P
TAPEWORM, dwarf, in Argentina, [Parodi] (66) 1128
TAR treatment of wounds, [Mantovani & Manzini] (65) 659
TARTAR emetic in malaria, intravenous injection of, [Hughes] (17) 1571
TARTRATES, action of citrates, oxalates and; study in tolerance, cumulation and effect of diet, [*Salant & Swanson*] (*50*) 1261
TEACHING, medical, and research after war, [Clark] 1885—ab
  medical, plea for more fundamental method in, [Lovett] **1070*
TEAR sign of actual death, [de Toledo] (97) 1197
TEETH and syphilis, [Galippe] (56) 61
  caries of, 238—E
  chronic infection from, [*Baude*] (23) 1402
  fifth cusp on, [Raillet] (58) 815
  prostheses, renewal of, 41
  removal of 30 denticles from one bicuspid socket, [Allen] *1234
TEMPERATURE, abnormally low, in soldiers, [Merklen] (44) 198
  drugs that influence, [Isenschmid] (36) 274
  internal and external, [Satre] (24) 1402
  sensitivity, clinical test for, [Cornell] (107) 1501
  subnormal, in neuritis and myalgia, [Kent] (41) 60
TEMPORAL BONE, myosarcoma of, with extension into posterior cranial fossa, [Elsberg] (58) 2055
TENDON reflexes, loss of, with skull wounds, [Souques] (26) 1265
  repair of, with saphenous vein, [Duvergey] (53) 738
  transplantation, nutrition and vitality of tendon in, [Steindler] (30) 884
  transplantation to stabilize hip joint, [Yergason] (15) 1633
TENNESSEE medical news, 174, 942, 1481, 1873
TENT cloth, punctures in, 410
TERATOMA, sacral, [Thompson] *266—ab*
TESTICLE held to be member of body, 1972—Ml
  implantation of, cases showing remote results of, [Lydston] *907
  implantation of, transformation from homosexuality by, 1328—ab
TESTIMONY, expert, permitted to contract for preparing to give, 264—Ml
TETANUS, [Taylor] *681
  after preventive injection of serum, [Lumière] 454—ab
  Antitoxin, Concentrated, 1159
  cerebral, 476, [Bérard & Lumière] (40) 492
  contracture after, treatment of, [Bérard & Lumière] (50) 131
  in home military hospitals, 1246
  localized and tardy, [Schellekens] (84) 353
  sodium persulphate in, [Leyva] (126) 58
  treated in home military hospitals, [Bruce] (19) 421
  treatment *of*, 45
TETANY *in* pregnancy and labor, [Guggisberg] (68) 495
TETHELIN, acceleration of growth of carcinomas by cholesterol and, part played by hydroxybenzol radical in, [Robertson & Burnett] (42) 730
  action of, [Barney] (67) 1980
TEXAS medical news, 474, 638, 942, 1179, 1389, 1617
THACHER'S Amber Injection misbranded, 1624—P
  Cholera Mixture misbranded, 1624—P
THEOCIN, death following administration of, [Cadbury] *19
THERMOMETER for blind, 1554
THIRST at sea, [Roberts] 1291—ab
THOMPSON Malted Food stock plan, 2047
  Memorial Lecture, 1215
THORAX, aspiration of, by simple siphonage device, [Felsen] *156
  cicatricial binding of arm to, [de Magalhães] (73) 710
  depression in, congenital, pathogenesis of, [Simonini] (72) 201
  diseases of, clinical and roentgen findings in, [Chapin] *1357
  roentgen study of 1000 chests at Camp Devens, [Davis] *1525
  serial frozen sections of, from case of aneurysm of aortic arch, [Fetterolf & Norris] (26) 116
  surgery of, in war, [Lockwood & Nixon] (3) 731
  wounds, [*Tuffier*] 882—ab
  wounds as seen at advanced operating center, [Rees & Hughes] (23) 491
  wounds, functional disturbances after, [Sergent & others] (24) 890
  wounds, in war, [Finzi] (51) 351, [Creyx] (62) 816
  wounds, infection of pleura with, [Roux-Berger & Policard] (62) 1194
  wounds, penetrating gunshot, treatment of, [Gask & Wilkinson] (1) 196
  wounds, series of cases seen at base, [Dean] (20) 1264
  wounds, treatment with special reference to infected hemothorax, [Hutchinson] (16) 959
THORIUM, effects of, and other substances on renal parenchyma when retained, [Burns & Hopkins] (35) 2055
THREAD, Barbour's linen flax, as substitute for Pagenstecher thread, [Tracy] 1787—C
THROAT and skin manifestations of acute anterior poliomyelitis, [Regan] (34) 314
  complications and tobacco in pulmonary tuberculosis, [Duboff] (21) 1119
  selzer water to clear, [Comby] (52) 815
  septic sore, due to streptococci, [Davis] (16) 650
THROMBOSIS, coronary, [Herrick] 1887—ab
  coronary, in relation to angina, [Herrick] 1030—ab
  postoperative embolism and, suggestions for prevention of, [McCann] (1) 1192
  treatment of, [Marris] (6) 419
THUMB, operation for substitution of, [Joyce] (9) 812
THYMOL Iodide, 1227
THYMUS, roentgenization of, in exophthalmic goiter, [Waters] (8) 54
THYROID: See also Goiter
THYROID and Brazilian trypanosomiasis, [Novaes] (78) 1986
  cyst in, following bullet wounds, [Baller] (69) 63
  effect of phrenic sympathetic union on, [Marine & others] (15) 808
  extract, influence of, on total metabolism and heart in heart block, [Aub & Stern] (29) 343
  feeding, influence of, on carbohydrate metabolism, [Kuriyama] (74, 75) 417
  hyperplasia and iodin, 848—E
  in gynecology, [Hayd] (25) 192
  instability with neuro-arthritism, [Lévi] (68) 1574
  sarcoma of, [Jorge & Arrillaga] (102) 1044
  secretion, effect of, on excitability of ending of cardiac vagus, [Levy] (43) 650
  surgery, [Haskins] 1330—ab
THYROIDECTOMY bandage, [John] *23
TIBIA, disease of tubercle, [Duran] (84) 965
  spiral fractures of, report of cases, [Davison] (15) 1033
TICS, sanatoriums for care of patients with, 1788
TIN poisoning, case of, [Salzer] *980
TINEA, roentgen treatment of, [Gouin] (66) 817
TINEA, sulphuration treatment of, 476
TISSUES containing nerves, assistance to study of, [Cone] *156
TOBACCO and aviation, [Tracy] 1325—C
  and throat complications in pulmonary tuberculosis, [Duboff] (21) 1119
TOLEDO, Sanchez, death of, 1875
TOLUIDIN-BLUE polychromatic stain, [Barron] (58) 1568
TONGALINE, 643—P
TONGUE depressor and mouth-gag, improved, [Moyer] *680
"TONICS and Sedatives," [Bates] 1255—C
TONSIL, cancer of, radium in, [Lannois & Moutet] (26) 273
  infections, chronic, [Moore] (73) 886
  peritonsillar abscess, [Bilancioni] (*37*) *2058*
TONSILLECTOMY and adenectomy, [Iddings] (92) 1390
  in diphtheria carriers, [Ballantyne & Cornell] (9) 59
TONSILLITIS, suppurative paranephritis following, 2 cases, [Botteselle] (78) 965
TOOTH: See Teeth
TORONTO Saturday Night on nostrum evil, 407—P
TRACHEA flattened by goiter, [Bircher] (37) 274
  pipe stem in child's trachea, [Steinsleger] (94) 425
  transplantation of, [Burket] (45) 885
  w[illegible] region [illegible]67
TRA[illegible] and esophagoscopy, [Forero] (96) 65
TRACHOMA in Cuba, [Penichet] (75) 1986
TRACTION stirrup, pin, combination Finochietto and Steinmann, [Hawley] *22
TRAINING camps for medical department, expansion of, 543
TRAMPS, [Martinez] (91) 579
TRANSFUSION: See Blood Transfusion
TRANSPLANTATION of ureter into duodenum in dogs, nitrogen metabolism and acidosis after, [Goto] (31) 1259
  of whole organs, studies in, [Dederer] *6
  organization of blood clots after autotransplantation, homoiotransplantation and heterotransplantation, [Loeb] (53) 810
TRAP shooting as recreation for physicians, 985—ab
TREMORS, war, 866
TRENCH Foot: See Foot, Trench
  sanitation of dugouts, 1964
TREPONEMA Pallidum: See Spirochaeta Pallida
TRICHINOSIS *simulating meningitis* with findings of trichina larvae in spinal fluid, [Meyer] *588
TRINITROTOLUENE, *blood of* workers in, [Smith] *231
  poisoning, causation and prevention of, 412
TRIPLETS twice in one year, [Hornstein] *224
TRIVALIN, new enslaving drug, 1875
TROCHES *and cough drops*, sale of, 1784
TROPHIC lesions accompanying nerve wounds, [Duroux & Couv*reur*] (*59*) *1340*
  lesions in face, [Talamo] (7) 964
TROPICAL diseases imported in France *during* war, [Carnot & *Turquéty*] (*29*) *273*
  soils, biologic processes in, [Eijken & Grijns] (110) 1804
TROPICS, acclimatization in, practical aspects of, [de Langen & Schut] (120) 1271
TROUSSEAU'S Wine, 559
TRYPANOSOMIASIS, Brazilian, acute case of, [Villela] (88) 1802
  Brazilian, and thyroid, [Novaes] (78) 1986
TUBERCLE structure in dermatologic diagnosis, [Carol] (84) 202
TUBERCULIN as diagnostic test of tuberculosis, [Ryan] *982
  Denys, B. F., 1227
  in pityriasis, [De Grado] (86) 1509
  in tuberculosis, [Cetrangolo] (89) 579

TUBERCULIN, New, B. E., 1227
New, T. R., 1227
Old, 1227
reaction and physical measurements, [Reis] (28) 814
reaction of blood to, [Barlocco] (69) 1801
tests, cutaneous and intracutaneous, in infants and children, [Bass] (1) 1566
tests in childhood, comparison of, [Warner] (33) 809
TUBERCULOSIS: See also under names of various organs, i. e., Larynx, tuberculosis of
TUBERCULOSIS and blastomycosis, [Sanfelice] (61) 1267
and cancer mortality in Netherlands, [Deelman] (105) 135
and cardiovascular examination of soldiers, 321
and correctable defects in drafted men, [Sawyer] *308
and leukemia, [Rietti] (75) 201
and lupus erythematosus discoides, [Weiss & Singer] (4) 1498
and mitral stenosis, [Burnand] (68) 1508
and pregnancy, [Douglass & Harris] 21—ab
and syphilis, [von Adelung] *1211
and war, 43
and war gases, [Tedeschi] (66) 740, [Gimbert] (75) 817
and war in France, [Bushnell] *663
animal experiments in immunity and treatment of, with cell poison obtained from sputum, [Howes] (17) 416
as factor in kidney and liver disease, [Schönberg] (70) 495
attempt to produce immunity by transplanting tuberculous lymph nodes into normal animals, [Webb & others] (35) 884
auscultation of pulmonary apices in young men, [King] (68) 487
bacilli, are all found in sputum virulent? [Corper] *1281
bacilli, cultivation of, from circulating blood in miliary tuberculosis, [Clough] (13) 125, (35) 126
bacilli, enzymes of, [Corper & Sweany] (52) 1400
bacilli in sputum, [Pettersson] (116) 136
bacilli, toxin extracted from, [Sivori & Jauregui] (86) 740
bacteriology of, [Castroman] (118) 1045
bone, treatment of, 1877
calcium iodid in, 481
campaign against, 1784
childbirth and, [McSweeny & Wang] *368
coagulating time of blood in, [Burns & Young] (2) 191
comparison between skin tests, using various tuberculosis antigens, and complement fixation phenomenon, [Wittich] (14) 416
death rate at Cordoba, 1221
diazo reaction in tuberculous children, 50
early diagnosis of, by roentgenographed guinea pig, [Eckford] (47) 56
examination of soldiers for, in U. S. Army, [Otis] (22) 268
examinations, simplified rules for, [Stoll] *605
food allowance for tuberculous, 1112
Framingham experiment in, 1974
Friedmann's vaccine for, end-results of, [Barnes] *909
functions of municipal sanatorium, policy to control group of sputum-positive consumptives not now reached by any measure, [Slade] 188—ME
goiter in, [Bircher] (37) 274
heliotherapy in, [Mayer] (36) 884
hospital, opened by American Red Cross in France, 43
in army, detection of, [Léon-Kindberg & Delherm] (65) 61
in army, problem of, [Bushnell] *1821
in Asia, [Clemou] 1097—ab
in Canadian soldiers, 1019
in navy and its prophylaxis, [del Castillo & Lopez] (95) 1641
in Serbian refugees, [Petrovich] (11) 272
in soldiers, detection of, [Sergent] (49) 738
in Spaniards, [Coni] (102) 1270
in uncivilized tribes, [Schut] (112) 1804
incipient, [Merklen] (73) 817
TUBERCULOSIS, initial lesion in, [Ribadeau-Dumas & Perrochon] (24) 1798
instructions for Advisory Boards and diagnosis by roentgenology, [Bardeen] 720—C
miliary, cultivation of tubercle bacilli from circulating blood in, [Clough] (13) 125, (35) 126
miliary, typhoid bacteremia during course of, [Bloomfield] (23) 1119
mortality, [Coni] (117) 1045, 1246
mortality in Greece, [Rondopoulo] (121) 119
notification of, [Lindhagen] (114) 136
paupers with, providing for treatment of, at special institutions, 1257—MI
polycythemia in, [Barlaro] (93) 1044
preventorium for infants in Farmingdale, [Hess] (16) 416
pulmonary, and pregnancy, [Norris & Landis] *362, [Walsh] (29) 883
pulmonary, artificial pneumothorax in, [Morgan] (43) 61
pulmonary, artificial pneumothorax in bilateral cases of, [Gammons] *675
pulmonary, artificial pneumothorax in, results in private and dispensary practice, [Greer] *1518
pulmonary, clinical signs of anatomic healing of, [Rusca] (75) 1801
pulmonary, comparison of physical signs, symptoms and roentgen-ray evidence obtained in, [Heise & Sampson] (37) 884
pulmonary, diagnosis of, [Signorelli] (74) 495
pulmonary, effect of, on renal function, [Mills & Henderson] (12) 125
pulmonary, hospitalization of army nurses who have contracted, 1784
pulmonary, importance of prolonged bed rest in, [Pratt] (13) 416
pulmonary, lung volume in men with, [Garvin & others] (52) 268
pulmonary, point of election and modes of invasion in, [Cobb] *1511
pulmonary, reduction of normal transparency of apices in, [Lebon] (61) 963
pulmonary, roentgen rays in diagnosis of, [Canovas] (101) 65
pulmonary, throat complications and tobacco in, [Duboff] (21) 1119
pulmonary, urinary tract in, [Schapira & others] *591
pulmonary, value of roentgen ray in diagnosis of, in war time, [Brown] *516
roentgen signs of, [Weil] (47) 1338
sanatoriums, are they worth while? [Billings & Hawes] (15) 416
serovaccine from avirulent living bacilli, [Shiga] (73) 353
syphilitic joint disease simulating, [Roberts] *372
treatment of, [Ferreira] (68) 1985
Tuberculin in: See Tuberculin
value of public health nurse in tuberculosis problem, [Heizer] (96) 733
visceral, conglomerate tubercle and combined degeneration of cord as complications of, [Bassoe] (16) 1398
weight changes with healing of lesions, [Jchok] (80) 1196
work for tuberculous, [Cantonnet] (35) 131
TULLE, greased, for dressings, [Descour] (42) 131
TUMOR: See also under names of various organs
TUMOR grafts, heterologous, histologic study of, [Bullock & Rohdenburg] (39) 730
influence of heat and radium on induced immunity against transplanted animal tumors, [Rohdenburg & Bullock] (64) 1979
malignant, fluctuations in growth energy of, in man, with reference to spontaneous recession, [Rohdenburg] (65) 1979
of peripheral nerves, primary, [Tomiselli] (76) 660
traumatic origin of, 2044
TURPENTINE, Man's or Tydings' Remedy misbranded, 1624—P
TYDINGS' Remedy misbranded, 1624—P
TYPHOID, atropin test in diagnosis of, [Mason] (19) 343, [Friedlander & McCord] *1435
bacilli associated with pyonephrosis, [Ruediger] *367
bacilli, effect of freezing on diphtheria bacilli and, 953
bacilli in feces, glycerin in examination for, [Beckler] *768
bacilli, inhibitive effect of ox-bile on, [Ecker] (49) 486
bacilli, presence of growth producing substance in cultures of, [Pacini & Russell] (34) 1567
bacilli, preservation of, by emulsifying in glycerin, [Benians] (32) 961
bacteremia during course of miliary tuberculosis, [Bloomfield] (23) 1119
carrier of 9 years' standing, history of case of, [Ruediger] *367
carriers, sand test of, [Borzone & Carbone] (90) 895
chronic, [Bergolli] (58) 1984
cystic point as sign of, [Genoese] (83) 1899
Dreyer method of agglutination used at Army Medical School, [Fennel] *590
extracts of antibodies obtained from specific precipitates of typhoid antityphoid serum, [Weinstein] (46) 731
feces in, examination of, [Baglioni] (79) 64
genital complications of, [Cade & others] (60) 1340
genito-urinary complications of, [Faroy] (51) 1573
in Cuba, [Lebredo] (92) 1269
in large cities of United States in 1917, *777, 780—E
liver dulness as sign of, [Campani & Bergolli] (70) 1640
mortality, [Giuzzetti] (53) 1127
nature of mononuclear cells in exudate of lobar pneumonia accompanying, [Forman & Hugger] (13) 1033
not caused by accident, 1029—MI
pancreatitis in, [McCrae] 1791—ab
surgical complications of paratyphoid and, [Johnson] (16) 130
unusual complication of, [Thomas] 481—C
vaccination against paratyphoid and, of native troops from New Caledonia, 1320
vaccination, date announced, 1116
vaccination, eye after, [Ginestous] (67) 578
vaccination free, 1874
vaccination, gastric hemorrhage after, [Marie] (36) 1265
vaccination in Argentina, [Mazza] (74) 894
vaccination in Uruguay, 1390
vaccination of Pacific Ocean Islanders against, [Laroche & Mazet] (46) 1573
vaccination, prophylactic triple inoculation against paratyphoid and, [Dreyer & others] (15) 1400
vaccination, triple, in army, agglutinin response after, [Fennel] *1915
vaccine, 623, 1227
vaccine, dangers of intravenous injection of, [Hale & Hartman] (140) 271
vaccine therapy of, [Micheli & Quarelli] (82) 1341
vaccine therapy of cholera and, [Danysz] (48) 1339
vaccine, triple, value of, in civil and military life, [Lyons] (93) 733
vegetative nervous system in, pharmacodynamic examination of, [Matsuo & Murakami] (35) 1033
with paroxysmal hemoglobinuria, [Ugon] (73) 1129
TYPHUS at Paris, [Netter & Blaizot] (37) 891
bacilli, inhibitive effect of ox-bile on, [Ecker] (85) 193
blood in, [Danielopolu] (3) 1571
blood pressure in, [Danielopolu & Simici] (36) 961
cardiovascular disturbances in, [Danielopolu] (29) 574, [Heitz] (38) 961
chlorin treatment of, [Danielopolu] (43) 891
conference on, in Mexico, 1390
in Madrid in 1916, [Marañon] (105) 65
TYPHUS in Portugal, 1180, [Cortezo] (49) 2059
intradermal reaction in, [Mantel] (68) 1042
Japanese mission to study, 1874
lesions, 1396—ab
spinal fluid in, [Danielopolu] (25) 890
TYRAMIN, effect of, on circulatory failure during infections and during or after operations, [Hewlett & Kay] *1810
TYREE'S Antiseptic and Aseptinol, 949—P
d-TYROSIN, bacterial demolition of, and stereochemical behavior of products, [Tsudji] (89) 1130

U

ULCERS: See also under names of organs, i. e., Duodenum, ulcer of; Stomach, ulcer of
ULCERS, hypertonic saline in treatment of wounds and, [Permin] (91) 1987
phagedenic, treatment of, [da Aja] (95) 1342
roentgen, of scalp, [Belot & Chavasse] (68) 817
tropical, new method of treating, [Halpin] (154) 271
ULTZMANN'S syringe, modification of, for posterior urethral instillations, [Hinman] *1317
UNCINARIASIS in Argentina, [Mayer & Borzone] (74) 1129
in United States Army, [Trabue & others] (72) 1189
treatment, [Darling & others] *499
UNIFORMS of officers, bill to furnish, 753, 1006
when to wear, 1883
UNITED STATES Army: See Army
Public Health Service: See Public Health Service
UNIVERSITY: See also Education; Schools, Medical
UNIVERSITY of Cincinnati and Cincinnati General Hospital, closer relationship between, 411
of Virginia Department of Medicine is recognized in New York, [Hough] 1396—C
UREA excretion, regulation of, by concentration of urea in blood and in urine, [Addis & others] (8) 1566
excretion, regulation of, by epinephrin, [Addis & others] (12) 1977
excretion, regulation of, by pituitary extract, [Addis & others] (13) 1978
excretion, regulation of, by unknown factors, [Addis & others] (8) 1566
index as test for kidney function in war hospital, [Fitz] *1755
UREMIA, forms of, [Heim & Tchertkoff] (65) 964
high, [Cortabarria] (110) 1642
study of, [Legueu & Chabanier] (63) 1574
with asystoly, [Josué & Parturier] (49) 1040
URETER, calculi in, [Martin] (92) 1576
calculi in, high frequency current for extraction of, [Young] (60) 1189
fistula of duodenum and, of spontaneous origin, [Davis] *376
kinking of, intermittent, in child, [Martin-Du Pan] (80) 134
stricture of, [Hunner] (43) 345
supernumerary and single, opening extravesically, [Judd] 415—ab
wounds of kidney and, treatment at front and behind lines, 254
URETEROVENOUS anastomosis, experimental hydronephrosis and blood nitrogen, [Reid] (47) 1035
URETHRA, absorption of drugs and poisons from bladder and, [Macht] (62) 1189
comparative absorbability of local anesthetics from, [Sollmann] (52) 1261
concretions in, large, [Castaño] (82) 424
endo-urethral diathermy, [Roucayrol] (36) 421
filiform structures of, new method of treating, [Buerger] (126) 959
fistulas of, 254
instillations in posterior, modification of Ultzmann's syringe for, [Hinman] *1297
sealing medication in urethral canal, technic for, [Ballenger & Elder] *834

URETHRA, stricture of, military aspect of, [Pasteau] (54) 1506
wounds of, deep, repair of, [Rochet] (69) 1897
URETHRITIS, gonorrheal, treatment of, [Lacombe] (50) 738
URETHROTOMY, external perineal, method of performing, [Barney] (97) 571
URIC ACID: See Acid, Uric
URINARY antisepsis, antiseptic properties and renal excretion of compounds related to phenolsulphonephthalein, [Davis] *581, [Davis & White] (33) 2055
obstruction, median bar excisor for, [Braasch] *758
tract, ascending infections of, [David] (87) 571
tract in pulmonary tuberculosis, [Schapira & others] *591
URINE, amino-acids in, from debilitated infants, [Cannata] (44) 1126
apparatus for collecting urine of male infants, [Schloss] *123
bacteriology of, in children with gastro-intestinal diseases, [Schwartz] (31) 809
chemical changes in blood and, in progressive muscular dystrophy, [McCrudden & Sargent] (41) 650
diagnosis of pregnancy from, [Koopman] (40) 1403
effects of epinephrin on flow of, in anesthetized and unanesthetized dogs, [Gunning] (21) 1332
elimination of diphtheria bacilli in, [Wildhagen] (92) 354
fat in, [Peutz] (123) 1642
findings, record of, [Hollande & Paucot] (41) 737
glucose in, determination of, [Ugdulena] (85) 1802
glucose in, rapid colorimetric method for estimating, [Isaacson] (74) 886
glycuronates in, simple test for, [Askenstedt] (77) 886
hemosiderin granules in cells of, as aid to diagnosis of pernicious anemia and hemochromatosis, [Rous] 1887—ab
in diabetes mellitus and relation of urinary acetone bodies to ammonia excretion, [Richards] (91) 1894
incontinence of, treatment without drugs, 34 recoveries, [Emerson] (4) 1566
influence of pituitary extract on daily output of, [Rees] (16) 1332
iodin reaction of, [Pezzi & Forli] (80) 965
of reptilians, 668—ab
quinin in, test for, [Baur & Reveillet] (52) 1573
regulation of urea excretion by concentration of urea in blood and in, [Addis & others] (8) 1566
salicyl, salicyluric acid in, [Hanzlik] (87) 194
spirochetes in, [Favre & Fiessinger] (36) 131
spirochetes in, with acute nephritis, [Sisto] (87) 64
staining technic, [Minerbi] (89) 818
sugar in normal, method for determination of, [Benedict & Osterberg] (48) 1567
sulphates in, determination of, [Flohr] (86) 353
toxicity of, clinical evaluation of, [Billard & Perrin] (13) 348
urobilin in, test for, [Marcussen & Hansen] (103) 896
UROBILIN and urobilinogen in duodenal contents, estimation of, [Giffin & others] (8) 1498
in urine, test for, [Marcussen & Hansen] (103) 896
UROBILINOGEN and urobilin in duodenal contents, estimation of, [Giffin & others] (8) 1498
UROLOGISTS, aphorisms of, [de Castro] (68) 1128
army, conference of, (60) 1506
UROLOGY and dietetics, relation between, [Lematte] (76) 1268
place of intraspinal therapy in, [Watson] *296
UROTROPIN: See Hexamethylenamin
URTICARIA, causation of angioneurotic edema, eczema and, by proteins other than those derived from food, [Walker] *897
from muscular exertion, [Prins] (57) 2059
URTICARIA, with malaria, [Garin & Pasquier] (27) 273
URUGUAY, National Academy in, 1390
UTAH medical news, 942
state board January report, 1256
state board October examination, 482
UTERUS, cancer of cervix, radium in, at Huntington Hospital, [Risley & Leland] (54) 193
cancer of cervix complicating triplet pregnancy, [Watson] 1916
cancer of, in Cuba, [de Aragon] (58) 277
cervix, amputation of, [de Bengoa] (79) 1268
cervix, bloodless repair of, [Heineberg] (20) 1499
cervix, cauterization treatment of, inflammation of, [Toribio] (89) 424
didelphys, pregnancy in, [Mazzini] (116) 1047
edema of uterine cervix, in pregnancy, [Knoop & van Dongen] (93) 1130
escape of foreign material from uterine cavity into uterine veins, [Sampson] 1885—ab
fibroids of, tendency to become sarcomatous, [Warner] (12) 192
fibromyomas of, roentgen treatment of hemorrhagic metritis and, [Lawrence] (129) 271
gravid, pedunculated myoma on, [Platero] (84) 894
hemorrhage and fibroids, radium in, [Miller] (105) 1636
hemorrhage, roentgen therapy and radium in, [Corscaden] (23) 883
pathologic, at menopause, [Robins] (12) 1033
prolapse and cystocele during child-bearing period, treatment of, [Watkins] (120) 1636
prolapse, new operation for, [Ries] (13) 1792
retrodisplacement of, sterility due to, treatment of, [Dorsett] 1888—ab
rupture of, during labor, causes and treatment of, [Zinke] 266—ab
syphilis of, [Bordarampé] (51) 277
tumor in new-born demanding operation, *report of case*, [Prince] *1212

V

VACCINATION: See also under names of diseases, i. e., Typhoid, Vaccination in
VACCINATION, agglutination method of diagnosis in triple inoculated individuals, [Perry] (55) 1895
significance of immediate reaction *after*, 391—E
successful, study of comparative number of, by cross scarification and incision methods, [Kremers] (62) 1635
VACCINE, autogenous, in enterococcus sepsis, [Langeron] (38) 265
experimental investigation of lipovaccines, [Whitmore & *others*] *427
mixed, not admitted to N. N. R., 1967—P
mixed triple, superiority of inoculations with, (B. typhosus, B. paratyphosus A and B. paratyphosus B), [Davison] (14) 1398
sensitized, in prophylactic treatment of infections, [Cecil] (6) 2053
virus, 1227
virus, brilliant green as bactericidal agent for purification of, [Krumwiede & others] (34) 570
virus, pure, cultivated in vivo, *properties of*, [*Noguchi*] (72) 1036
VACCINE THERAPY: See also under names of Diseases
VACCINE THERAPY, bacterial, in prostatic cases, [Bumpus] *213
fundamentals of, [Holland] (92) 733
VAGINA, *absorption of drugs and* poisons through, [Macht] (50) 732
absorption through, 1538—E
artificial, [Abbott] 341—ab
douching of, [Fothergill] (1) 1795
drainage in pelvic cases, [Hinchey] 1888—ab
VAGOTONY with gastric ulcer, [Ayres] (55) 1127
VARICELLA: See Chickenpox
VARICOCELE, warning against operations for, on applicants for enlistment, [Bloodgood] 409—C
VARICOSE VEINS, *operative treatment* of, [Guaccero] (54) 1984
spiral incision treatment of, [Hoogveld] (95) 497
surgical treatment of, [Anderson] 1331—ab
VARIOLA: See Smallpox
VASOCONSTRICTOR action after clotting and platelet count of human blood, [Hirose] (22) 1891
action *of blood serum*, experiments on, [Janeway & others] (21) 1891
VASODILATOR reactions, [Hunt] (14) 808
VASO-EPIDIDYMOSTOMY *for* obstructive sterility in male, [Lespinasse] *118
VEGETABLES, dehydrated, [Givens] *1713, 1766—E
powder as larvicide in *flight* against mosquitoes, [Thibault] *1215
VENA CAVA, superior, obliteration of, [Favre] (55) 1267
VENCALNODINE, 481
VENEREAL DISEASES, [Hume] 338—C
act, prosecution for quackery under, 1551
and matrimony, [Orfila] (84) 661
campaign against, 170, 1020
clinics for, 1245
control of, in Massachusetts, 1234
discussion of, 475
discussion of, in German Senate, 1875
evening consultations for, 1554
in army, a suggestion, [Belfield] 1324—C
in army, control of, [Woodbury] 1970—C
in Ontario, 252
in Spain, repression of, 1482
incidence of, 1166
inquiry into feeble-mindedness and, 252
legislation, 332
moral welfare of military establishments to be further safeguarded, 1770
moving picture entitled "Fit to Fight," 1166
prevention of, most effective methods of, [Baldy] 1975—ab
problem in California, [Irvine] *150
prophylactic treatment in prevention of, [Thrush] *1922
prophylaxis of, [Bourdinière] (69) 1195
proposed federal control of, 1771
public warning against, in Netherlands, 1875
straddle stand for prophylaxis and treatment of, in Army, [Clark] *90
treatment of, 1181
VENOSAL, 48—P
VERATRUM, clinical actions of, [Collins & Hanzlik] (93) 887
VERMIN, sulphuration treatment of, 476
VERMONT medical news, 1244
state board February examination, 1397
VERONAL and novocain to be manufactured in United States, 43
classed as poison by England, 953
VERRUCA, 232—T
VERTEBRAE, cervical, dislocation of, [Speed] (44) 192
method of draining bodies of, [Mayer] *593
VICK'S Vap-O-Rub, 1024—P
VINCENT'S angina, [*Deglos*] (51) 962
boric acid-hypochlorite mixture, antiseptic power of, 1320
VIRGINIA medical news, 252, 552, 638, 942, 1179, 1389, 1481
VIRILISM, suprarenal, in woman with hypernephroma, [Guemes] (75) 353
VISCERA, syphilis of, in young infants, [Menabuoni] (72) 1268
VISION, acuteness of, test of, 259
and equilibration, [Fisher & Lewis] 1625—C
binocular, "hole in the hand" test for, [Cantonnet] (39) 422
VITAMINS, [Madsen] (58) 2060
and bacteria, 1164—E
antiberiberi, location of, in germ rather than in pericarp of grain, 1000—E
behavior of, 1005—E
in diet, [Pittaluga] (62) 1128
stability of, 1230—E
VOMITING of pregnancy, feeding in, [Bacon] *1750
VOMITING *of pregnancy*, serotherapy for, [Melgar] (45) 2059
paroxysmal, with inherited syphilis, [Barbier] (29) 1798
repeated, cause of hemorrhagic erosion of stomach, [Murata & Hashimoto] (11) 348
VULVA, unusual ulcerative process of, [Schiller] (7) 1118

W

WANDERLUST in degenerates, [Helweg] (131) 1272
WAR: See also Army; Soldiers; Wounds
WAR, amalgamation of our citizens through, [de Tarnowsky] 1963
and alarmists, [Vallon] (22) 1798
and law, [Cutting] 1938
and science, [Coulter] 1937
archives and museum at Val-de-Grâce, 2015
organization of medical profession for, [Bevan] *1805
responsibilities of, 535—ab
welfare service during, and reconstruction period, 511—ab
WART: See Verruca
WASHINGTON medical news, 331, 942, 1110, 1617
state board January examination, 1971
WASSERMANN REACTION, criteria of, [Moore] 643—C
error of, [Jacobson] *2002
estimating value of; titration of complement for its power to combine in syphilitic system, [Stillians] (31) 2054
post-mortem, study of 400, [Graves] *1751
sending serum by mail for, 1255—ab
technic for, [Ronchese] (59) 577
value of, [Larkin & others] *1589, [Norris] 1970—C
value of, indicated by postmortem investigation in 331 cases at Bellevue hospital, [Symmers & others] *279
WATER, drinking, chemical purification of, [Denisot] (62) 132
drinking, chemical tests of, [Maillard] (28) 1265
radio-active, equipment to produce, [Laborde] (69) 817
sterilization and purification of, with isotonic sodium hypochlorite solution, [Fralick] (92) 653
vapor, loss of, through skin in *infants*, [*McClure & Sauer*] (37) 1034
waste in Chicago, 927—E
WATER-BED pavilion at Vienna, 1180
WEIGHT at birth and growth capacity, relation between, [Hammett] (12) 1332
changed with healing tuberculosis, [Jehok] (80) 1196
normal, of school children, [Camescasse] (43) 1194
WEIL'S DISEASE: See Jaundice, Infectious
WELFARE service during war and reconstruction period, 511—ab
work for mothers and infants in Paris district during war, [Bar] (42) 1572
WENDELL'S Ambition Pills, 1024—P
WEST VIRGINIA medical news, 943
WESTERN Roentgen Society, *meeting of*, 252
WHALE, edibility of, 852—E
fat, 593—ab
WHEAT flour, bolting of, [Maurel] (35) 575
flour, whole, [Feer] (54) 739
WHITE Pine Expectorant and White Pine Balsam *misbranded*, 1183—P
WHOOPING COUGH, bacteriology of, [Comby] (35) 737
contagiousness and prophylaxis of, [Cozzolino] (67) 1340
in young infants, [Railliet] (51) 199
treatment of, [Shaw] (93) 489
vaccine in prevention of, [Vander Bogert] (3) 1398
"WHY Is My Soldier Sick?" antivivisectionists' misrepresentation exposed, [Keen] 1542
WIFE, communication of syphilis to, an assault, 1029—Ml
separate estate of, obligated *to* pay for medical services, 1187—Ml
WISCONSIN *medical news*, 109, 252, 331, 638, 794, 943, 1110, 1617, 1782
state board February report, 1256
state board January examination, 1185

- WISCONSIN state board September meeting, 120
- WITNESSES, showing contingent fees of, 484—Ml
- WOLFF'S law of bone transformation, [Keith] (30) 961
- WOMEN, muscular strength of college women, [Mosher & Martin] *140
  - wage earners, health of, 693—E
- WORK, graduated, circulatory reactions to, in normal people and in those with cardiac insufficiency, [Barringer] (13) 2053
- WORKMEN'S compensation law, approval of claim for treating abscess after 30 days from accident, 878—Ml
- WOUNDED: See also Soldiers; War; Wounds
- WOUNDED, care of (British zone of advance), [de Tarnowsky] *771
  - saving, in retreat, 1553
  - transportation of, [Gilmour] (61) 487, 1101
- WOUNDS: See also under names of organs and regions
- WOUNDS, aerobic bacteria found in, received on battlefield of Somme, study of, [Lawrence] (74) 732
  - associated movements after, [Roncoroni] (38) 275
  - bacterial flora of, in war, [Plisson & others] (28) 1124
  - bismuth iodoform petrolatum paste in, [Emerson] *79
  - brilliant green in recently inflicted, [Massie] (46) 1895
  - catgut netting to stimulate granulation in, 228—ab
- WOUNDS, cicatrization of, [Tuffler & Desmarres] (74) 652
  - determination of origin of, and diseases of soldiers, 1784
  - dressingless treatment of, 1022
  - dressings that do not touch, 476
  - "embalming" treatment of, [Mencière] (52) 1800
  - extensive, in war, [Challer & Glénard] (65) 893
  - functional disability after war, [Falcone] (69) 1267
  - healing of, laws of, [Lumière] (80) 1899
  - healing over of, in war, [Vignes] (70) 63
  - heliotherapy for, [Aimes] (30) 574
  - hot air treatment of, [Lafaye] (43) 1265
  - infected, acriflavine and proflavine in, [Carslaw & Templeton] (45) 1895
  - infected, dichloramin-T in infections and, [Lee & Furness] (5) 568, (86) 571
  - infected, hot paraffin bath for, [Soresi] (74) 1508
  - infected, treatment of, [Silvestrini] (66) 201, [Morgan & others] (6) 812, [Pereira] (99) 1197
  - leukocytes in, emigration and bactericidal effects exerted by, [Wright] (15) 1263
  - liability for failure to discover foreign particles in, standard of care and errors of judgment, 1632—Ml
  - magnesium sulphate in, [Morison] (4) 1335
- WOUNDS, multiple war, operative indications for, [Okinczyc & Clavaud] (35) 1572
  - neuritis from, [Sicard] (20) 889
  - paraffin film dressing for, [Robert] (63) 1194
  - paralysis after, [Pitres] (23) 273
  - penetrating, unusual, deaths from, [Hatton] *155
  - pyelonephritis following, in war, [Uteau & Schwab] (54) 494
  - relief of constriction of, by incision, [Depage] 880—ab
  - saline solution in treatment of ulcers and, [Permin] (91) 1987
  - secondary hemorrhage from, prophylaxis of, [Revel] (49) 493
  - septic phlebitis due to, [Burrows] (36) 1895
  - septicemia in, [Anderson & Richardson] (3) 812
  - serum conserved dressing for, [Williams] (19) 1259
  - soap solution and water and primary suture for, [Haycraft] (14) 572
  - soap solution in, at casualty clearing stations, [Dixon & Bates] (13) 130
  - solvent action of antiseptics on necrotic tissue, [Taylor & Austin] (54) 268
  - streptococci in, [Ramond & Vergelot] (43) 1639
  - suture of, delayed primary, [Morrison] (20) 1504
  - suture of, early, [Gross] (54) 61
  - suture of, early secondary, 554
  - suture of, primary, [Gross] (45) 1266, [Lemaitre] (67) 1897, [Gross] (29) 2057
  - suture of, primary and secondary, 334
  - suture of, primary, at front in France, [Bowlby] (1) 1335
  - suture of, primary retarded, 1877
  - tar treatment of, [Mantovani & Manzini] (65) 659
  - treatment of, [Moynihan] (123) 58
  - treatment of, antiseptic and aseptic, [Ferrari & Delotte] (36) 1572
  - treatment of, aseptic and open air treatment compared with antiseptic treatment, [Besley] (137) 195
  - treatment of, surgical developments in, during war, [Robson] (1) 490
  - war, and acute endocarditis, [Karsner] 1888—ab
- WYOMING state board February examination, 1628
  - state board March, June and October examinations, 482

X

- X-RAYS: See Roentgen Ray
- XEROSTOMIA, information wanted on, 404

Y

- YALE University School of Medicine, improvements in 4 years, 1164—E
- YELLOW FEVER, rational treatment of, [Aragão] (78) 578

Z

- ZINC salts, production of glycosuria by, [Salant & Wise] (60) 1978
- ZOOLOGY and war, 1003—ab

AUTHOR INDEX

In this Index are the names of the authors of articles which have appeared in The Journal, the names of those who have read papers before Societies as published in The Journal and those whose articles have been abstracted in the Current Medical Literature Department. The * preceding the page reference indicates that the article appeared in full in The Journal. The number in parentheses indicates the numbered paragraph on the page referred to. The numbers not in parentheses indicate pages. The author's name is followed by a brief clue to the subject of the article in brackets.

A

Abalas, J. B., [Cholecystectomy] (86) 1406
Abbo, R., [Paget's disease of bone] *371
Abbott, A. W., [Artificial vagina] 341
Abderhalden, E., [Defensive ferments] (51) 658
Abercrombie, R. G., [Nephritis] (24) 1895
Abrahamsen, H., [Contracture of elbow] (123) 968
Abramson, H. L., [Poliomyelitis vaccination] *1142, [Poliomyelitis] 1328
de Abreu, M. D., [Radiology] (80) 1986
Achard, H. P., [Fractured femur] (60) 893
à Court, A. W. H., [Subtertian malaria] (20) 814
Acuña, M., [Walled-in meningitis] (31) 1505
Adams, T. W., [Toxin of B. welchii] (74) 127
Addis, T., [Renal activity] (8, 10) 1566, (12) 1977, (13, 16) 1978
Adson, A. W., [Anesthetic machine] *1746
Agustini, I. G., [Helminthiasis] (75) 740
Agramonte, R. B., [Syphilis] (115) 1198
Aigrot, G., [Hernia of brain] (44) 575
Aimé, H., [Parameningococcus septicemia] (31) 125
Aimé, P., [Functional heart disturbances] (25) 2057
Aimes, A., [Heliotherapy for wounds] (30) 574
Albee, F. H., [Bone clamp] (76) 1795
Albert-Weil, E., [Roentgen treatment of keloid] (60) 132, [Radiotherapy] (45) 892
Alderson, H. E., [Cutaneous medicine] *71
Aleixo, A., [Leishmaniosis] (81) 1269
Alessandri, R., [Reinfusion of extravasated blood] (36) 2058
Alevisatos, [Cancer of esophagus] (35) 1982
Alexander, H. L., [Streptococcal infection] *775, [Immunity to pneumococci] (58) 810, [Measles] *1827
Alfelt, M., [Irrigation of ear] (104) 580
Alford, L. B., [Lymph in nerves] (84) 886
Alivisatos, A. S., [Duodenal ulcer] (25) 814
Allaria, G. B., [Mothers' refectories] (71) 201
Allegra, S. P., [Drainage for peritonitis] (64) 659
Allen, B., [Removal of denticles] *1224
Allen, P. W., [Classification of bacteria] (33) 730
Allport, F., [Mouth gag] *768
Alvarez, C., [Melanodermia plus keratodermia] (90) 496
Alva [illegible] seg-
Ama [illegible] reactions] (78) 134
Amar, J., [Stumps] (78) 1899
Amaral, J., [Cancer of liver] (82) 1269
Ambard, L., [Elimination by kidneys] (30) 197, (74) 1898
Ameuille, [Kala-azar] (37) 1638
Amieux, J., [Mechanotherapy for wounded] (60) 577
Amoss, H. L., [Rosenow's antipoliomyelitic serum] (82) 652, [Poliomyelitic virus in brain] (73) 1036
Anders, J. M., [National Public Health Day] 1561
Andersen, C. L., [Protein in eye disease] (111) 1344
Anderson, C. P., [American ideals] 1939
Anderson, H. G., [Aeroplane accidents] (9) 572
Anderson, H. M., [Septicemia in wounds] (3) 812
Anderson, W. S., [Varicose veins] 1331
Andresen, A. F. R., [Jejunal feeding] (15) 1890
Andre-Thomas, [Intermittent claudication] (38) 1338
Andrewes, F. W., [Serologic work on meningococcus] (21) 130, (10) 1796
Aragão, H. de B., [Yellow fever] (78) 578
de Aragon, E. R., [Uterine cancer] (58) 277
Aranha, M. de S., [Ambard's constant] (69) 1985
Araya, R., [Dyspepsia from perigastritis] (87) 1406
Arcelin, M., [Projectiles in neck and head] (79) 1899
Argañaraz, R., [Nystagmus] (88) 1641
Arié, L., [Crippled respiration] (44) 1639
Armand-Delille, P., [Malaria] (29) 1337
Armitage, H. M., [Blood pressure in head injuries] (133) 654
Arnd, K., [Goiter] (37) 274
Arnold, H. D., [Medical education and war] *451, [Council problems] 484
Arrillaga, F. C., [Sarcoma of thyroid] (102) 1044
Arteaga, J. F., [Repeated cesarean section] (71) 353, [Rectal examination in pregnancy] (104) 819
Arullani, P. F., [Liver and insomnia] (71) 1640
Ascoli, V., [Modern medical clinic] (74) 965
Ashman, R., [Anesthetics] (11) 1332, [Increasing oxidation] (18) 1332
Askenstedt, F. C., [Glycuronates in urine] (77) 886
Atkinson, H. V., [Animal calorimetry] (35) 1188
Attlee, W. H. W., [Meningitis] (37) 1895
Aub, J. C., [Thyroid extract and heart-block] (29) 343
Aubertin, C., [War tachycardias] (49) 892, (32) 1338
Auer, J., [Use of epinephrin] *70
Austin, J. H., [Solvent action of antiseptics] (54) 268, [Renal disease] (29) 1033, [Antiseptics and bacillus welchii toxin] (68) 1036, [Hypochlorite and chloramin-T solutions] (69) 1794, [Toxicity of antiseptics] (70) 1794
Avery, O. T., [Types of pneumococcus] *17
Aviles, J., [Cancer] (85) 1509
Ayres, O., [Vagotony with gastric ulcer] (55) 1127

B

Baastrup, S., [Acute leukemia] (101) 896
Babcock, R. H., [Cardiac affections] *355, [Angina pectoris] 1031
Baccarani, U., [Fever after infectious disease] (61) 1404
Backman, E. L., [Renal insufficiency] (134) 1046
Bacon, C. S., [Hyperemesis gravidarum] *1750
Bacot, A. W., [Clothes louse] (20) 1895
Baer, W. S., [War fractures] *1530
Baeslack, F. W., [Meningococcus] *684
Baetjer, W. A., [Bence-Jones proteinuria] *137, [Trench fever] *1597
Baglioni, G., [Stools in typhoid] (79) 64
Bailey, F. W., [Intra-abdominal and slit hernias] 266
Bainbridge, W. S., [Pregnancy and cancer] (3) 342
Baird, E. H., [Appendicitis] 1330
Baird, J. P., [Appendicitis] 1330
Baker, R. H., [Condyloma of bladder] *412
Baker, T., [Genito-urinary causes of back pain] (1) 650
Baldy, J. M., [Venereal diseases] 1975
Ballantyne, C. C., [Tonsillectomy in diphtheria carriers] 9) 59
Ballenger, E. G., [Urethral medication] *831
Baller, M., [Bullet in thyroid] (69) 63
Bambaren, C. A., [Lumbar puncture in headache] (52) 371, [General paralysis] (82) 496, [Insanity] (88) 1341
Bang, S., [Minimum ration of fat] (99) 1130
Bar, P., [Social problems of mother and child] (42) 1572
Barbat, J. H., [Arsenic and the meninges] *147
Barber, H. W., [Psoriasis] (6) 1503
Barber, M. A., [Hookworm infection] *499
Barber, W. H., [Annular segmental gastrectomy] (48) 192
Barbier, H., [Syphilis] (29) 1798
Barchalla, S., [Scarlet fever] (91) 661
Barclay, A. E., [Foreign body in brain] (2) 1038
Bard, L., [Carcinosis of lung] (64) 964, [Tachycardia] (27) 1638
Bardeen, C. R., [Tuberculosis] 720
Barfoed, A., [Safety match box dermatitis] (111) 1510
Barillas, P. A., [Oxygen in stomach disease] (94) 1576
Barlaro, P., [Amebiasis] (78) 424, [Polycythemia in tuberculosis] (93) 1044
Barlecco, A., [Tuberculin] (69) 1801
Barnes, H. L., [Friedmann's vaccine] *209
Barnett, G. D., [Colorimetric method] *1062, [Renal activity] (8, 10) 1566, (12) 1977, (13, 16) 1978
Barney, E. L., [Tethelin and lipoids] (67) 1980
Barney, J. D., [External perineal urethrotomy] (97) 571
Barr, D. P., [Breakfast and heat production] (23) 1891, [Metabolism] (25) 1891
Barragan, M., [Nongonorrheal disease of prostate] (77) 424
Barré, J. A., [Sphincters with shell shock] (50) 815, [Arterial pressure] (44) 1040, [Meningeal hemorrhage] (26) 1337, [Concussion of spinal cord] (38) 1982
Barringer, T. B., Jr., [Heart's functional capacity] (14) 126; [Cardiac insufficiency] (13) 2053
Barron, M., [Polychromatic toluidin-blue stain] (58) 1568
Barthélomy, E., [Detection of ameba cysts] (31) 273
Bartholomew, R. A., [Syphilis and stillbirths] *289
Bashford, E. F., [Flavine] (8) 419, [Delayed primary suture] (20) 1504
Basile, G., [Pituitary mental symptoms] (56) 422
Bass, E., [Juvenile delinquents] (107) 1894
Bass, M. H., [Heart block] *287, [Tuberculin tests] (1) 1566
von Bassewitz, E., [Embolism from mercurial treatment] (94) 64
Bassoe, P., [Paraplegia] (58) 1334, [Cord degeneration and visceral tuberculosis] (16) 1398
Bastogi, G., [Precipitation test for syphilis] (68) 1267
Bates, H., ["Tonics and Sedatives"] 1255
Bates, H. T., [Soap in treatment of wounds] (13) 130
Baude, A., [Dental infection] (23) 1402
Baum, W. L., [Medical service at Camp Grant] 563
Baumann, C. T., [Maximal blood pressure] (61) 200
Baumann, L., [Acidosis in children] (1) 267
Baur, J., [Quinin in urine] (52) 1573
Bauza, J. A., [Edema] (70) 1129
Bayliss, W. M., [Intravenous injection in shock] (1) 2056
Bayma, T., [Amebic dysentery] (70) 1985
Bazy, L., [Sensitized autovaccines] (75) 1898
Beaujard, E., [Measurement of ventricles] (28) 890
Beaussart, [Epididymitis with meningitis and influenza] (26) 2057
Beaver, D. C., [Ozena] (81) 1121
Beck, [Rachitis] (60) 1897
Beck, E. G., [Bismuth paste] (41) 1500
Beckler, E. A., [Typhoid bacilli] *768, [Pneumococci] *836
Béclère, [Local treatment of gassed] (55) 61
Belfield, W. T., [Venereal disease in army] 1324
Belknap, L. J., [Tax on oleomargarin] 802
Belot, J., [Roentgen ulcer] (68) 817
Benedict, S. R., [Sugar in urine] (48) 1567
Benet, G., [Hodgkin's disease] (24) 55
de Bengoa, M. B., [Amputation of cervix] (79) 1268
Benians, T. H. C., [Preservation of typhoid bacilli] (32) 961
Béniety, A., [Jacksonian paresis] (55) 815
Benoist, F., [Chassis dressing] (64) 578
Benson, H. A., [Gonococcic endocarditis] *1524
Bérard, L., [Contracture after tetanus] (50) 131, [Cerebral tetanus] (40) 492, [Bone grafting] (70) 1195
Bercovitz, N., [Large calculus] *604
Bergeim, O., [Intragastric conductance] (1) 124
Berger, J. L. R., [Shock] (62) 963
Berghausen, O., [Hemorrhagic disease] *514
Bergolli, F., [Liver dulness in typhoid] (70) 1640, [Chronic typhoid] (58) 1984
Bergstrand, H., [Bronchiectasia] (126) 1200
Bernard, A., [Malaria] (57) 494
de Berne-Lagarde, R., [Cancer of kidney] (56) 1506
Bernhard, O., [Goiter] (82) 817
Bernheim, [Psychoneuroses and hysteria] (72) 63, [Somnambulism] (34) 1403
Bernstein, H. A., [Perineal lacerations] *1217
Berri, J. C., [Renal serotherapy] (111) 1198
Berrut, A., [Rheumatism and heart disease] (47) 1800
Berterini, J. I., [Abscess of occipital lobe] (93) 818
de Besche, A., [Asthma] (113) 1804
Besley, F., [Impressions of the front] 1468
Besley, F. A., [Fracture of femur] *87, [Treatment of wounds] (137) 195
Bessesen, A. N., [Hypodermic syringe] *1145
den Besten, G., [Atropin and physostigmin] (111) 66
Bethune, C. W., [Vesical drainage] *1820

Bevan, A. D., [Organization for war] *1805, [Address at military meeting] 1932
Bezançon, F., [Meningitis simulating malaria] (47) 198
Bézy, P., [Meningitis] (37) 737
Bidenkamp, J. H., [Rupture of labium minus] (91) 354
Bie, F., [Kidney function] (129) 1200
Bie, V., [Nomenclature for diseases of blood] (162) 896
Bijl, J. P., [Meningitis] (95) 895
Bilancioni, C., [Peritonsillar abscess] (37) 2058
Billard, [Toxicity of urine] (13) 348
Billings, B. W., (Sanatoriums] (15) 416
Billings, F., [Reconstruction and rehabilitation] 1924
Bine, R., [Pleural eosinophilia] (9) 1498
Bing, R., [Ankle reflex and organic disease] (64) 1640
Binshtok, V. I., [Death rate in Russia] (106) 741
Bircher, E., [Goiter] (37) 274, [Cancer of esophagus] (65) 1640
Bissell, D., [Abdominal pad] *677
Bittman, H., [Wassermann reaction] *279
Black, C. E., [Wounds of cervical spine] 415
Blackfan, K. D., [Intraperitoneal injection of saline solution] (2) 267
Blackford, J. M., [Auricular flutter] (31) 343
Blaizot, [Typhus] (37) 891
Blake, J. A., [Suspension and traction in fractures] (65) 133
Blanc y Fortacin, [Arterial gangrene] (87) 1509, [Spinal anesthesia] (107) 1803, [Hernias] (108) 1803
Blegvad, O., [Progressive myopia] (115) 1344
Bloch, M., [Parameningococci] (46) 1040
Blondel, [Stretcher for abdominal wounds] (43) 131
Bloodgood, J. C., [Varicocele operations] 409, [Hernia] *515
Bloomfield. A., [Typhoid bacteremia and tuberculosis] (23) 1119, [Anemia] (20) 1633
Blumberg, A., [Immunity] (53) 1568
Boas, E. P., [Calcification of pineal gland] (24) 343
Bobrie, J., [Dextrocardia] (27) 1982
Bock, J., [Carbon monoxid poisoning] (117) 820
Bodin, E., [Syphilitic primary lesion] (60) 1041
Bodley, J. W., [Carrel-Dakin solution] (75) 811
Bois, L., [Negatoscope] (32) 574
Boisseau, J., [Contracture of hands] (53) 576, [Microsphygmia with contracture] (60) 815, [Contracture] (27) 890, (28) 1337, (28) 1402
Bollman, J. L., [Infection with B. welchii] (75) 127
Bolo, P. O., [Dilatation of stomach] (109) 967
Bolten. G. C., [Blue sclerotics] (109) 1342
Bompiani, G., [Hemorrhagic icterus] (59) 739
Bond, C. J., [Hemagglutinin reaction] (2) 959
Bonnefon, [Grafting operations] (52) 575
Bonnette, [Camp bed] (56) 494
Bonney, V., [Myomectomy or hysterectomy] (2) 1192, [Crystal violet and brillian green] (5) 2056
Borchgrevink, O., [Prostatectomy] (112) 742
Borda, J. T., (Brain tumors] (94) 1044
Bordarampé, J., [Syphilis of uterus] (51) 277
Bordet, E., [Roentgenoscopic outlining of ventricles] (29) 1125
Bordley, J., Jr., [Blinded soldiers] 1931
Borelli, E., [Rat-bite disease] (63) 739
Bornstein, M., [Dakin-Carrol treatment] *1820
Borobio, P., [Bladder calculi] (90) 1342
Borrino, A., [Lactation] (45) 1126, [Breast nursing] (61) 1985
Bory, L., [Syphilis] (22) 348, [Eclampsia] (58) 893
Borzone, R. A., [Sand test for typhoid carriers] (90) 895, [Hookworm] (74) 1129
Boschi, G., [Prothesis for paralyzed leg] (71) 1340
Bosredon, [Burial after battle] (38) 815
Bosworth, A. W., [Dicalcium phosphate as constituent of infants' food] (30) 126
Botey, R., [Radium in cancer of larynx] (107) 1641
Botteselle, R., [Paranephritis after tonsillitis] (78) 965
Bouet-Henry, [Rubber in hot film dressings] (15) 348
Bourdinière, [Venereal disease] (69) 1195
Bovée, J. W., [Tubal and ovarian hemorrhage] 1975
Bovin, E., [Ileus in parturients] (119) 66
Bowditch, H. L. [Dicalcium phosphate as constituent of infants' food] (30) 126
Bowlby, A., [Primary suture] (1) 1335
Bowman, F. B., [Stomatitis and gingivitis] (57) 1120
Bowman, K. M., [Nervous and mental diseases] (2) 1977
Braasch, W. F., [Median bar excisor] *758, [Lithiasis] (42) 885, [Renal tuberculosis] 2052
Bracken, L. L., [Federal Trade Commission requests use of official names] 558
Brackett, E. G., [Fracture of spine] (8) 1890
Bradbury, S., [Streptococcus oral sepsis] (56) 487
Bradley, D. E., [Meningococcus cultures] *1816
Brady, W., [Cardiovascular disease] *1449
Braillon, [Pleurisy] (76) 817
Braisted, W. C., [Address] 1936
Brandan, R. A., [Blood in heart and kidney disease] (86) 496
Brav, A., [Optic nerve atrophy after skull fracture] *1595
Breccia, G., [Functional test of heart] (58) 423
Brian, P., [Dehydratation in diabetes] (20) 1338
Brickner, W. M., [Spina bifida occulta] (1) 1498
Bridge, N., [Henry Bachman Stehman] 872
Bridgman, E. W., [Diuretics and blood pressure] (31) 1033
Brissaud, E., [Transfusion in measles] (23) 1798
Bristol, L. D., [Infantile paralysis] (55) 810, [Measles] (32) 1188
Brocq, P., [Projectile in wall of heart] (70) 133
Brooks, B., [Bone regeneration] (42) 192
Brooks, H., [Hyperthyroidism] 728. [Empyema] 1886
Brossard, J., [Aortic insufficiency] (33) 1571
Brossy, J., [Hernia in children] (76) 63
Brown, C. P., [Bone transplantation] *1353
Brown, D., [National licensure] 480
Brown, G. E., [Recurrent paralysis] *4
Brown, L., [Roentgen ray and tuberculosis] *516
Brown, N. W., [Venous pressure] (25) 1333
Brown, P. K., [Nurses and war] *1438
Brown, R. D., [Slide rule] *678
Brown, W. L., [Bone transplantation] *1353
Brownfield, R. R., [Acuity of hearing] *597
Browning, C. H., [Crystal violet and brilliant green] (5) 2056
Bruce, D., [Tetanus] (19) 421
Bruce, H., [Address] 1933
de Brun, H., [Malarial tremor] (31) 1638
Brunelle, G. C., [Meningococcus] *684
Bruyère, I., [Gastric crisis in tabes] (48) 815
Bryant, W. S., [Ear injuries in French army] (6) 129
Buchholtz, J., [Iodids] (134) 1200
Budd, S. W., [Vaccine for asthma] (10) 2053
Buerger, L., [Renal tuberculosis] (103) 419, [Urethral stricture] (126) 959
Buford, C. G., [Air in mediastinum] (111) 1636
Bugbee, H. G., [Renal tuberculosis] (103) 1636
Bulkley, K., [Suspension and traction of fractures] (65) 133
Bullock, F. D., [Heterologous tumor grafts] (39) 730, [Radium and tumors] (64) 1979
Bulman, F., [Calcium] (60) 351
Bumpus, H. C., [Vaccine therapy] *213
Bunce, A. H., [Meningococcus] *684
Bunting, C. H., [Reduced oxidation] (70) 1036
Buquet, A., [Wounds of arteries] (58) 1800
Burge, W. E., [Alcoholic intoxication and catalase] (7) 124, [Pancreatectomy and catalase] (19) 125, [Catalase in shock] (17) 808, [Anesthetics] (11) 1332, [Increasing oxidation] (18) 1332, [Oxidation in body] (18) 1978
Burket, W. C., [Transplantation of trachea] (45) 885
Burland, C., [Rickets] (31) 1571
Burnand, R., [Induced pneumothorax] (62) 494, [Mitral stenosis and tuberculosis], (68) 1508
Burnett, T. C., [Acceleration of growth of carcinomas] (42) 730
Burns, J. E., [Locating calculi] (57) 269, [Thorium and renal parenchyma] (35) 2055
Burns, N. B., [Coagulation time in tuberculosis] (2) 191
Burrows, H., [Septic phlebitis] (36) 1895
Bushnell, G. E., [Tuberculosis] *663, *1821
Butler, G. R., [Cardiovascular examinations] *844

C

Cadbury, W. W., [Death following theocin] *19
Cade, A., [Genital complications of typhoid] (60) 1340
Cajozzo, G., [Prophylaxis of hernia] (63) 261
Calame, P., [Amebic dysentery] (56) 1267
Calandra, E., [Metal scraps in tissues] (72) 1640
Calandre, L., [Functional capacity of right heart] (28) 574
Caldarola, P., [Meningococcus] (84) 817
Caldwell, G. T., [Fat embolism] (129) 58
Calendoli, E., [Color test of flour] (63) 1267
Caliceti, P., [Otitic complications with enterococcus] (43) 275, [Adenoids and pituitary feminism] (72) 1508
Calleja, C., [Angina pectoris] (92) 497
Calve, J., [Shortening of femur] (1) 1331, (37) 1505
Cameron, D. F., [Roentgenography] *754, [Sodium and potassium iodids in roentgenography] *1516
Camescasse, J. E. L., [Weight of children] (43) 1194
Campana, R., [Stool in liver disease] (81) 1802
Campani, A., [Spasmophiliac neurasthenia] (74) 660, [Liver dulness in typhoid] (70) 1640
Campbell, J., [Septic hemothorax and empyema] (4) 734
Campbell, W. C., [Fractures of femur] (105) 734
Campbell, W. R., [Placental transmission of creatinin and creatin] (30) 1567
Campion, G. G., [Injuries of mandible] (8) 1400
Canelli, A. F., [Syphilis of kidneys] (63) 1985
Cannaday, J. E., [Resection of intestine] 266
Cannata, S., [Chlorides in blood] (81) 64, [Amino-acids in urine] (44) 1126
Cannon, W. B., [Wound shock] *526, *531, *611, *618
Cano, J. O., [Abdominal wounds] (83) 660, [Reflex amyotrophy] (105) 1045
Canovas, B. N., [Roentgenoscopy with tuberculosis] (101) 65
Cantieri, C., [Tardy meningitis] (76) 201
Cantonnet, [Work for tuberculous] (35) 131
Cantonnet, A., [Test of vision by "hole in hand"] (39) 422
Capezzuoli, C., [Goiter] (79) 495
Capote, F. M., [Public health in Cuba] (81) 661
Capps, J. A., [Face mask] *910
Carbone, J. M., [Sand test for typhoid carriers] (90) 895
Carles, J., [Detection of ameba cysts] (31) 273, [Malaria] (61) 816
Carles, P., [Sodium sulphate] (41) 575
Carlson, A. J., [Stability of secretin] 115, [Pains in ulcer] (10) 124, [Stomach in fasting] (17) 343, [Gastric secretion during fever] (32) 1033
Carman, R. D., [Cancer of lung] (5) 267
Carnelli, R., [Neurotrophic edoma] (68) 659
Carnot, P., [Amebic dysentery] (29) 273, [Gastric crisis in tabes] (48) 815
Carol, W. L. L., [Tubercle in diagnosis] (84) 202
Caronia, G., [Syphilis and tuberculosis] (43) 350, [Ossifying myositis] (68) 1340
Carpano, M., [Glanders in felines] (62) 1267
Carpentier, [Arrhythmia] (29) 197, [Pulsus alternans and digitalis] (34) 1571
Carrau, A., [Paralysis and mitral disease] (31) 890, (83) 894
Carrera, J., [Abdominal wounds] (83) 660
Carrié, P. A., [Anachlorhydria] (41) 198, [Gastric juice] (18) 272, [Gastritis in gassed] (44) 962, [The sympathetic syndrome] (27) 1124
Carro, S., [Gastric ulcer] (98) 1803
Carroll, E. P., [Sacral tabes] *755
Carslaw, R. B., [Acriflavine and proflavine] (45) 1895
Carstens, J. H., [Gallbladder disease] (19) 192
Carter, H. S., [Medical aspect of gastro-enterostomy] (6) 191
Casares, G., [Photographic record of pulse] (92) 1803
Casaubon, A., [Walled-in meningitis] (31) 1505
Cassinelli, L. R., [Development of schoolchildren] (88) 579
Castaño, E., [Urethral concretions] (82) 424
Casteigts, M. M., [Lymphogranulomatosis] (81) 424
Castellano, T., [Aneurysm] (78) 1575
Castex, M. R., [Syphilis as factor in gastric ulcer] (90) 134, (66) 352, [Brain tumors] (95) 1044, [Syphilitic meningitis] (65) 1128, [Hemoglobinuria plus Raynaud's disease] (78) 1406
del Castillo, J. G., [Tuberculosis] (95) 1641
de Castro, A., [Traumatic paralysis] (73) 1268
de Castro, R., [Asphyxia] (112) 1045, [Criminal responsibility] (102) 1641
de Castro, S. V., [Aphorisms of urologist] (68) 1128
Castroman, M. R., [Tuberculosis] (118) 1045
Cathelin, F., [Wounds of bladder] (68) 1897
Caussade, L., [Phrenopericarditis] (61) 1574
Caussimon, J., [Subacute melancholia] (40) 575
Cawston, F. G., [Bilharziasis] *439
Cayrel, A., [Spirochete jaundice] (35) 1265
Ceccarelli, G., [Ankylosis of elbow] (75) 660
Cecikas, [Heart distress] (85) 1129
Cecil, R. L., [Foreign protein in arthritis] (24) 125, [Pneumonia] 728, [Empyema] 1886, [Sensitized vaccines] (6) 2053
Ceconi, A., [Five-day fever] (41) 275, [Nephritis] (79) 965, [Big abdomen] (76) 1341
Ceresole, G., [Projectiles in pleura] (70) 578
Cetrangolo, A., [Tuberculin in tuberculosis] (89) 579
Chabanier, H., [Uremia] (63) 1574
Chalfant, S. A., [Puerperal infection] 1975
Chalier, A., [Chassis dressing] (64) 578, [Wounds] (65) 893
Chambers, G. G., [Entrance requirements] 485
Chapin. H. D., [Diseases of chest] *1357
Chapman, H. S., [Colorimetric method] *1062
Chapman, V. A., [Inflammable spectacle] 120, [Bárány chair tests] 1560
Chaput, H., [Capillary drainage of mastitis] (35) 891, [Amputation stumps] (42) 1039
Charles, R., [Wounds of abdomen] (2) 1335
Charlet, L., [Gonococcus count] (47) 815
Charteris, F., [Anonychia] (30) 1895
Chauffard, A., [Echinococcosis of liver] (24) 1337, [Diabetes] (20) 1338, [Resisting power of blood corpuscles] (48) 1639
Chauvin, E., [Wounds of joints] (73) 133
Chavasse, [Roentgen ulcer] (68) 817
Chavasse, F. B., [Myalgia] (5) 419
Chéné, H., [Parameningococcus septicemia] (31) 1125

Chesney, A. M., [Pneumonia] (26) 1891
Cheynou, [Asthenia from overexertion] (33) 349
Chiappori, R., [Subtentorial tumors] (96) 1044
Chick, H., [Antiscorbutic value of milk] (13) 490
Chiriaco, P., [Malta fever] (65) 1985
Christian, H. A., [Chronic myocarditis] 1886*, 1909
Christiansen, J., [Alcohol sterilization] (132) 1046, [Dermatitis from matches] (118) 1804
Churchman, J. W., [New incision] (22) 956, [Joint infection] *1047
Cicera, R. E., [Sebaceous cysts] (61) 371
Cifuentes, P., [Kidney calculi] (89) 1197
Cinaglia, R., [Hypertrophied prostate] (71) 659
Citelli, S., [Adenoids with pituitary feminism] (72) 1508
Ciuffini, P., [Tumors of temporal lobe] (67) 659, (52) 1126
Clark, J. B., [Straddle stand] *90
Clark, J. G., [Medical teaching and research after war] 1885
Clark, L. P. [Epileptic] *357
Clark, O., [Gummas in corpora cavernosa] (82) 134
Clark, S. N., [Psychoses with diabetes] (85) 418
Clarke, T. W., [Infant feeding] (7) 1633
Claude, H., [Paralysis and contracture] (48) 728, [Endocarditis] (19) 1402, [Concussion of spinal cord] (56) 1800
Claudius, M., [Stain for protoplasm of bacteria] (92) 661
Clausen, S. W., [Blood sugar in diabetes] (27) 343
Claraud, H. D., [Multiple wounds] (35) 1572
Clayton, T. A., [Gas treatment of scabies] (38) 575
Clerc, A., [Dextrocardia] (27) 1982, [Functional heart disturbances] (25) 2057
Clock, R. O., [Antipollen serum] (46) 486
Clough, M. C., [Tubercle bacilli from blood] (13) 125, [Cultivation of tubercle bacillus] (35) 126, [Auto-agglutination] (24) 1333
Cobb, J. O., [Tuberculosis] *1511
Coca, A. F., [Blood transfusion] 1497
Cocci, G., [Frozen feet] (70) 1801
Cederque, R., [Hyperemia] (70) 1405
Coffen, T. H., [Arteriosclerosis] (98) 489
Cohen, M. B., [Partial-tension plates] *84, [Meningococcus cultures] *1997
Cohen, M. S., [Poliomyelitis] (41-43) 570
Cohen, S. J., [Gastric secretion during fever] (32) 1033, [Lactic acid and respiratory center] (41) 1892
Cohen, S. S., [Quinin and pneumotoxin] (37) 1634
Cohn, A. E., [Blood pressure] (35, 36) 1259
Cole, P. P., [Fractures of mandible] (7) 1400
Cole, R., [Pneumonia] *1146
Colistro, C. P., [Dystocia and pituitary extract] (86) 894
Collie, J., [Neurasthenia in army] (24) 1637
Collin, A., [Development of nervous system] (30) 890
Collins, R. J., [Veratrum] (93) 887
Colwell, N. P., [Medical education] 484
Comby, J., [Whooping cough] (35) 737, [Mongolism] (36) 736, [Seltzer water to clear throat] (52) 815, [Lead parotitis] (53) 815, [Diphtheria antitoxin] (53) 892, [Infantilism of intestines] (44) 1194, [Herpes] (30) 1982, [Child welfare work] (31) 1982
de Concilliis, D., [Asphyxiating gases] (76) 1508
Condamin, R., [Radium in gynecology] (61) 1507
Condat, [Leukocyte count in cerebrospinal fluid] (27) 814
Cone, S. M., [Study of tissues containing nerves] *156
Coni, E. R., [Charitable institutions of Buenos Aires] (86) 579, [illegible] [Tubercu- [illegible] 1045, [illegible] 70, [In- [illegible]) 1642, [Welfare work at Buenos Aires] (98) 1900
Cook, M. W., [Intracutaneous absorption] (47) 731
Cook, R. L., [Epididymitis] *981
Cooke, A. B., [Malposition of colon] *812
Coombs, H. C., [Organ extracts and muscle] (15) 343
Cornell, B. S., [Tonsillectomy in diphtheria carriers] (9) 59
Cornell, E. L., [Temperature sensitivity] (107) 1501
Cornwall, E. E., [Rectal feeding] *1451
Corpechot, [Traumatic monomyoplegia] (71) 133
Corper, H. J., [Tubercle bacilli] *1281, [Enzymes of tubercle bacillus] (52) 1400
Corridi, L., [Precipitation test for syphilis] (68) 1267
Corscaden, J. A., [Roentgenotherapy in uterine hemorrhage] (23) 883
Cortabarria, F., [Dissecting perimastitis] (71) 1129, [High uremia] (110) 1642
Cortezo, V. M., [Typhus] (49) 2059
Corvetto, A., [Echinococcosis] (94) 1197
Corwin, R. W., [Conduct of hospitals] 341
Cosmettatos, G. F., [Syphilis of cornea] (119) 1199
Costa, S., [Diphtheria bacilli] (39) 198, [Epididymitis after meningitis] (45) 1040
Costantini, [Siphon sterilization of pleura] (56) 963
Cottet, J., [Acroparesthesia from chilling] (43) 1982
Cottin, E., [Glycosuria during intercurrent disease] (27) 736, [Pressure of spinal fluid] (42) 1403
Cotton, H. A., [Paresis] (63) 1569
Coulter, J. M., [Science and war] 1938
Couturier, H., [Suppression of alcohol in histologic technic] (46) 131
Couvreur, E., [Trophic lesions] (59) 1340
Covisa, J. S., [Congenital syphilis] (87) 1043, [Echinococcosis] (85) 1987
Cowell, E. M., [Wound shock] *520, *607, *618
Cozzolino, O., [Whooping cough] (67) 1340
Cramer, A., [Aortic insufficiency] (33) 1571
Crawford, B. G. R., [Jaundice with atrophy of liver] (5) 1795
Cremonese, G., [Malaria] (50) 1404
Creyx, [Wounds of chest] (62) 816, [Nonsuppurative encephalitis] (56) 1573
Criado, M. F., [Scleroderma with nodules] (59) 1128
Crile, G. W., [Medical profession and war] 239
Crinon, J., [Army psychiatric centers] (74) 63
Crohn, B. B., [Gastric contents] (8) 2053
Cros, [Emetin in liver disease] (35) 815
Cross, A. J., [Cantharides poisoning] (18) 125
Crouson, O., [Tachycardias] (48) 1040
Crowder, J. R., [Angioneurotic edema] (15) 125
Crowder, T. R., [Angioneurotic edema] (15) 125
Crowell, B. C., [Intestinal spirochetes] (70) 957
Cruchet, R., [Neuro-psychiatric centers] (39) 131
Crumley, W. G., [Dakin's solution] *840
de la Cruz Correa, J., [Reflex cough] (99) 65
Csonka, F. A., [Fatty acids in blood] (40) 1188
Culver, H., [Renal infections] *1444
Cumming, J. G., [Pneumonias] *1066
Cumston, C. G., [Cesarean section] (60) 199, [Paul's tube] (46) 575
Curdy, R. J., [Miotics in sphincter iridis] *1992
Curtis, A. H., [Bladder after operation] 1974
Curtman, L. J., [Occult blood in stools] (57) 417
Cushing, H., [Wounds of brain] (1) 1038
Cushny, A. R., [Digitalis] (49) 1261
Cutting, C. S., [Law and war] 1939
Cuvillier, L., [Sensitized autovaccines] (75) 1898

D

da Aja, E. A. S., [Phagedenic ulcers] (95) 1342
Daguet, M., [Albuminuria after nephritis] (34) 815, [Dyspepsia] (27) 1337
Dale, H. H., [Therapeutics of dysentery] (86) 194
d'Alessandria, P., [Fracture of femur] (85) 61
Damaye, H., [Army psychiatric centers] (74) 63
Dambrin, G., [Skull plastics] (34) 1982
Daniel, F., [Alcohol in spinal fluid] (33) 121
Danielopolu, D., [Cardiovascular disturbances in typhus] (29) 574, [Spinal fluid in typhus] (25) 890, [Typhus] (43) 891, [Blood pressure in typhus] (36) 961, [Blood in typhus] (32) 1571
Daniels, A. L., [Peanuts] (57) 956
Dannenberg, A. M., [Face mask] *990
Danysz, J., [Vaccine in typhoid and cholera] (48) 1339
Darling, I. A., [Neurosyphilis] *1521
Darling, S. T., [Hookworm infection] *199
Darlington, C. G., [Wassermann reaction] *279
Daure, [Film treatment after mastoid operation] (48) 1573
Daussat, [Crippled hands] (35) 656
Dauvergne, J., [Diphtheria bacilli] (39) 198
David, V. C., [Ascending urinary infections] (87) 571
Davin, J. P., [New York health insurance bill] 1115
Davis, A. B., [Toxemias of pregnancy] (8) 342
Davis, C. H., [Anesthesia in labor] (88) 571
Davis, D. J., [Streptococci and sore throat] (16) 650
Davis, E. G., [Duodeno-ureteral fistula] *376, [Urinary antisepsis] *581, (33) 2055
Davis, E. L., [Chest examinations] *1525
Davis, G. G., [Lumbosacral pains] (1) 650
Davison, C., [Spiral fractures of tibia] (15) 1023
Davison, T. C., [Replacement of scalp] *1368
Davison, W. C., [Mixed triple vaccine] (14) 1398
Dean, C., [Chest injuries] (20) 1264
Debré, R., [Slow endocarditis] (58) 577, (44) 891, (26) 1798
DeCourcy, J. L., [Rupture of cesarean scar] *840
Deerop, M., [Dysentery] (56) 1339
Dederer, C., [Transplantation of kidney] *6
Dedichen, L., [Liver function] (74) 278, (93) 354
Deelman, H. T., [Cancer and tuberculosis mortality] (105) 135, [Mammary cancer] (117) 967
De Flines, E. W., [Saddle nose] (128) 1016
Deglos, [Vincent's angina] (51) 962
Deglos, E., [Chronic amebiasis] (30) 273
De Grado, J. S., [Tuberculin in pityriasis] (86) 1509
de Jong, H., [Bronchiectasia] (106) 1342
DeKruif, P. H., [Toxin of B. welchii] (74) 127, [Infection with B. welchii] (75) 127, [Anaphylatoxin and anaphylaxis] (79) 1509
de la Paz, D., [Emetin and kidney] (117) 1122
Delaunay, H., [Locke's fluid] (71) 1897
De Levie, D. J., [Asthma] (95) 1130
Delgado, H. F., [Insanity] (88) 1341
Delherm, A. [Detection of tuberculosis] (65) 61
Delitala, F., [Fracture of calcaneum] (40) 350, [Amputation of hand] (43) 1126
Delmas, J., [Large vessels in buttocks] (37) 577
Delmas, P., [Rights of wounded and of surgeon] (36) 1338, [Lumbosacral cocainization] (30) 1402
Delmon, A., [Tests with fluorene] (112) 819
Delorme, E., [Severed nerves] (58) 1340
Delort, M., [Examination with digestive disease] (25) 349, [Chronic diarrhea] (26) 814
Delotte, A., [Treatment of wounds] (36) 1572
del Sel, M., [Syphilitic nephritis] (87) 134
del Toro, J., [Cancer] (84) 1509
Deluca, F. A., [Suprarenal hematoma] (94) 1509
Del Valle, A. G., [Sprue] (117) 1198
Del Valle, D., [Exploratory laparotomy] (138) 58, [Blood cyst of kidney] (94) 966
Denéchau, D., [Slow endocarditis] (41) 891
Denis, W., [Nonprotein constituents of edema fluids] (17) 125
Denisot, G., [Purification of water] (62) 132
Denslow, F. M., [Syphilis of bladder] *154, [Prostatectomy] *441
Depage, A., [Incision in constriction of wounds] 880
Deromps, M., [Syphilis of femur] (29) 890
Descour, [Greased tulle for dressings] (42) 131
Desmarest, [Cancer of rectum] (26) 736, (64) 1574
Desmarres, R., [Cicatrization of wounds] (74) 652
Desnos, E., [Bilharziosis] (42) 737
Desplats, R., [Wounds of arteries] (58) 1800
Dessy, S., [Amebiasis] (65) 352, [Plague pseudo-tuberculosis] (90) 1509
Destefano, J., [Interlobar pleurisy] (108) 819
Detweiler, H. K., [Localization of streptococcus viridans] (49) 368, [Anthrax] *671
Dévé, F., [Echinococcus disease] (28) 1982
Devic, A., [Acute bacillary dysentery] (44) 493
Dewey, R., [Psychopathic commitment law] *292
Dezwarte, [Lymphotherapy and serotherapy] (46) 1266
Dice, W. G., [Preeclamptic toxemia] (9) 342
Dick, G. F., [Pneumonia] *1529
Dickinson, S. W., [Oil inunction] 1787
Di Cristina, G., [Meningitis] (60) 1985
Diddens, E. J., [Appendicitis] (88) 353
di Stefano, S., [Cholesterol in blood] (59) 659
Dixon, R. G., [Soap in treatment of wounds] (13) 130
Dobell, C., [Therapeutics of amebic dysentery] (86) 194
Dobson, J. F., [Infected hemothorax] (12) 959
Dock, G., [Student's clinical course in medicine] 566, [Medical study] *1595
Dodds, F. C., [Reciprocity applications] 648
Doi, T., [Implanting of nerve in muscle] (90) 1130
Doléris, [Bread] (30) 1638
Dominguez, J. A., [Pharmaco-ethnology] (115) 1642
Dopter, C., [Antimeningococcus serotherapy] (38) 198, [Meningitis] (49) 1194
Dorlencourt, H., [Constipation] (56) 1040, [Oculocardiac reflex] (66) 1195
Dorsett, E. L., [Sterility due to retrodisplacement] 1888
Doubler, F. H., [Aneurysm of abdominal aorta] (5) 1498
Dowling, M., [Address] 2014
Downes, W. A., [Hour-glass stomach] (136) 195
Downing, E. D., [Blastomycosis] *85
Dragstedt, C. A., [Intestinal obstruction] (67) 1036
Draper, J. W., [Reconstruction of colon] (16) 1890
Dreyer, G., [Inoculation against typhoid] (15) 1400
Drinker, C. K., [Nucleated red corpuscles] (78) 652, (69) 1036
Drinker, K. R., [Nucleated red corpuscles] (78) 652, (69) 1036
Drouin, [Laparotomies] (63) 816
Drummond, H., [Wound of liver and right ventricle] (12) 812
Dubard, [Magnesium and cancer] (18) 1798
Dubin, H., [Lipoids] (34) 1188, [Iron elimination] (34) 1260
Duboff, W. S., [Tobacco and tuberculosis] (21) 1119
Du Bois, E. F., [Breakfast and heat production] (23) 1891, [Metabolism] (25) 1891
Dubois-Roquebert, [Epinephrin test of heart] (47) 1506
Dudley, D. G., [Anthrax] *15
Dudley, F. C., [Artificial respirator] *21
Dufour, H., [Serum in hemorrhage] (16) 348
Dufourt, P., [Acute bacillary dysentery] (44) 493
Dumas, R., [Contracture of hand] (53) 963
Duncan, L. C., [Measles and pneumonia] (70) 732
Dunham, E. K., [Dichloramin-T] (85) 571

Dunlavy, H. C., [Cystic duct after cholecystectomy] (146) 195, 265
Dunn, G. R., [Hemoglobin] (45) 345
Dunn, J. S., [Nephritis] (1) 959
Dunn, N., [Lesion of musculospiral nerve] (4) 1331
Dupré, (Emotive constitution] (36) 1638
Duran, A. L., [Disease of tibial tubercle] (84) 965
Duroux, E., [Trophic lesions] (59) 1340
Duverger, [Oculocardiac reflex] (49) 658
Duvergey, J., [Tendon repair] (53) 739
Dworetzky, J., [Tuberculosis of larynx] (20) 1119
Dyer, I., [United service medical school] 649

E

Eager, R., [Psychoses and shell shock] (11) 1570
Eberson, F., [Plague infection] (80) 193, (44) 486, (24) 574, [Rosenow's antipoliomyelitic serum] (82) 652
Ecker, E. E., [Toxin produced by B. paratyphosus B] (70) 127, [Effect of ox-bile on B. typhosus] (85) 193, (49) 486
Eckford, W. H., [Diagnosis of tuberculosis] (47) 56
Edgar, J. C., [Eclampsia] *1205, [Midwife] 1975
Edsall, D. L., [Health in stone-cutting industry] 1441
Edwards, F. S., [Fistula in ano] (13) 2056
Edwards, J. S., [Pathology] (16) 1981
Eggleston, C., [Appliance for training infants to stool] *156
Eijken, P. A. A. F., [Tropical soil] (110) 1804
Eiken, T., [Fracture of calcaneum] (110) 1578
Eiras, F., [Otogenous meningitis] (70) 352
Eisendrath, D. N., [Cystic duct after cholecystectomy] (146) 195, 265
Elander, G., [Reduplicative paramnesia] (112) 1344
Elder, O. F., [Urethral medication] *834
Elias, S., [Asthma] (122) 1199
Ellis, A. G., [Brain tumor] *1905
Elsberg, C. A., [Myxosarcoma] (58) 2055
Elzas, M., [Glycosuria] (104) 1342
Emerson, M. L., [Bismuth iodoform paste] *79, [Artery rupture] *1145
Emerson, W. R. P., [Enuresis] (4) 1566
Epstein, A. A., [Nephritis] 1976
Ervin, D. M., [Blood pressure and convulsions] *1208
Escalada, M. C., [Hypersecretion in parotid] (96) 1641
Escande, F., [Projectile in wall of heart] (70) 133
Escat, E., [Evaluation of hearing] (38) 131
Escomel, E., [Poisonous spiders] (98) 1044
Escribano, V., [False membranes in peritoneum] (60) 1128
Espejo, G. E., [Brain injury] *1279
Espejo, L. D., [Tabetic amaurosis] (53) 351
Etienne, G., [Paratyphoid B] (45) 962
Evans, W. A., [Chicago Health Department Bulletin] 1629

F

Fabbretti, A., [Meningitis] (66) 1405
Faber, H. K., [Rabbits in pneumococcus type differentiation] *1459
Faber, K., [Hemolytic jaundice] (89) 202
Fages, A. G., [Leprosy] (89) 895
Fahræus, R., [Blood in pregnancy] (101) 1900
Falbing, N., [Bladder tumors] (105) 580
Falcone, R., [Disability after wounds] (69) 1267
Falconer, E. H., [Polycythemia] *1143
Falk, I. S., [Potassium bromate and enzyme action] (46) 1188
Falls, F. H., [Allergic phenomena after intraportal injection] (83) 193
Fantus, B., [Tungstates of alkaloids] (48) 56
Farbwerke-Hoechst Co., [Salvarsan] 1628
Farmachidis, C. B., [Mercurial treatment of syphilis] (77) 965
Faroy, G., [Typhoid genital lesions] (51) 1573
Faulds, A. G., [Sarcoma and cystic disease of bone] (10) 735
Favre, M., [Spirocheturia] (36) 131, [Spirochetosis] (22) 1124
Favre, R., [Obliteration of superior vena cava] (55) 1267
Fayolle, H., [Endocarditis] (26) 1798
Feer, E., [Whole wheat flour] (54) 739
Feil, H., [Cardiovascular examinations] (55) 1035
Felsen, J., [Chest aspirations] *156
Fennel, E. A., [Lipovaccines] *427, *902, [Agglutination tests] *590, [Typhoid vaccination] *1915
Fenwick, P. C., [Jaundice] (4) 1795
Ferguson, R. S., [Dislocation of knee] *1213
Fernandez, J. S., [Opacity of cornea] (74) 740, [Cataract operations] (86) 966, (101) 1198, [Medical press] (97) 1269
Ferrannini, A., [Cancer of liver] (84) 1802
Ferrari, F., [Treatment of wounds] (36) 1572
Ferreira, C., [Tuberculosis] (68) 1985
Ferro, P. B., [Hygiene of eyes] (110) 819
Fetterolf, G., [Aneurysm of aortic arch] (26) 416
Fey, B., [Wounds of arteries] (69) 133
Field, M. T., [Gastroduodenal perforation] (23) 730
Fielder, F. S., [Brilliant green and vaccine virus] (34) 570
Fiessinger, N., [Spirocheturia] (36) 131, [Spirochete jaundice] (15) 272, [Febrile spirochetosis] (16) 272
Fiévez, J., [Rat-bite disease] (47) 1639
de Figueroa, J. S., [Plantain fruit flour] (113) 967
Filardi, G., [Pseudohermaphrodite] (69) 894
Finks, A. J., [Stizolobin] (58) 1978
Finlayson, A. D., [Treatment of paresis] (7) 1977
Finochietto, E., [Inguinal hernia] (88) 134, (64) 352
Finochietto, R., [Access to iliolumbar region] (77) 894, [Megacolon] (99) 1044, [American surgery] (96) 1900
Finzi, N. S., [Skin ink] (7) 572
Finzi, O., [Wounds of thorax] (48) 351
Fiolle, J., [Large vessels in buttocks] (57) 577, [Wounds of spleen] (81) 1899
Fisher, L., [Visual factors in aviation] 1625
Fisk, E. L., [National health] *300, [Cardiovascular examinations] 558
Fitz, R., [Urea index] *1755
Fleischner, E. C., [Starch digestion] (13) 1259
Fleming, A., [Acidemia in gas gangrene] (18) 889
Fleming, J. S., [Meningococcus] *684
de Fleury, M., [Psychoneuroses] (48) 1194
Flohr, A. L., [Sulphates in urine] (86) 353
Florand, [Heart in scarlet fever] (46) 1506
Flores, C., [Plants poisonous for cattle] (100) 819
Floyd, W. O., [Intestinal obstruction] 1330
Force, J. N., [Smallpox vaccination] (80) 418
Ford, W. W., [Bacteria of intestinal tract] 1886
Fordyce, J. A., [Wassermann reaction] *1589
Forero, A., [Esophagoscopy and tracheobronchoscopy] (96) 65
Forgue, E., [Arteriovenous aneurysms] (63) 893
Forli, V., [Iodin urine reaction] (80) 965
Forman, J., [Tumors of salivary glands] (9) 568, [Exudate in pneumonia of typhoid] (13) 1033
Fosalba, R. J., [Vital statistics] (103) 819
Foster, M. G., [Renal activity] (16) 1978
Fothergill, W. E., [Vaginal douching] (1) 1795
Fox, H., [Streptococcus] *1758
Fraga, C., [Suprarenal form of malaria] (97) 1509
Fralick, W. G., [Water purification] (92) 653
Francini, M., [Congenital genu recurvatum] (38) 350, [Fractures of long bones] (55) 1984
Francis, F. D., [Herpes zoster] *1061
François, A., [Tuberculous meningitis] (19) 348, [Addison's disease plus goiter] (56) 815, [Subdulness at apex] (57) 815
François, R., [War suprarenal insufficiency] (42) 198
Frank, J., [Dysmenorrhea] *985
Frankhauser, E., [Emotions] (79) 1196
Fraser, J., [Injuries of ear] (1) 271, [Wound shock] *520, 526, *618
Fraser, J. S., [Injuries of ear] (1) 271
Frattini, B., [Anemia plus lymphadenosis] (75) 1575
Frazier, C. H., [Trigeminal neuralgia] *1345
Freeman, L., [Primitive surgery] *443
Freire, O., [Findings in air passages] (92) 1197
Fremiet, F., [Film dressings for burns] (37) 575
French, H. E., [Entrance conditions] *1058
Frets, G. P., [Reduction in weight] (99) 579
Frias, A., [Tuberculosis of iris] (99) 1342
Fridenberg, P., [Equilibration] *991
Friderichsen, C., [Hemorrhage in suprarenals] (101) 426
Frieberg, T., [Drainage of eye] (127) 1200
Friedel, [Physiology of rectum] (29) 1505
Friedlander, A., [Antipneumococcic serum] (75) 1189, [Atropin test) *1435
Froelich, M., [Hip joint disease] (72) 133
Frontz, W. A., [Radium in cancer] (55) 269
Fujimoto, B., [Von Dungern's indigo test] (45) 731
Fulchiero, A., [Blood pressure] (73) 660
Fuld, J. E., [Bone transplantation] (18) 955
Furness, W. P., [Dichloramin-T] (5) 568, (86) 571
Fynn, E., [Buttermilk] (116) 1642

G

Gabbi, U., [Diseases from filtrable virus] (88) 64
Gade, F. G., [Cancer] (130) 1272
Gage, H., [Head injuries] (70) 1189
Gagliardo, P., [Defective development from syphilis] (48) 351
Galippe, V., [Dental stigmata of syphilis] (56) 61, [High heels] (36) 492
Galland, M., [Section of ulnar nerve] (50) 892, [Shortening of femur] (1) 1331, (37) 1505
Galliard, L., [Emphysema of lungs] (21) 272, [Cancer of lung] (57) 1897, [Black pleurisy] (21) 2057
Gallie, W. E., [Bone repair] *1134
Gallo, A. G., [Dilatation of stomach] (109) 967
Galtier, J., [Sciatica and high blood pressure] (32) 349
Gammeltoft, S. A., [Abortion] (107) 580
Gammons, H. F., [Artificial pneumothorax] *675, *843
Gannon, J. A., [Cyst of femur] (98) 1981
Garcia, C. M., [Rachitis] (88) 966
Gardner, A. D., [Inoculation against typhoid] (15) 1400
Garin, C., [Urticaria with malaria] (27) 273
Garnier, M., [Cholalemia in jaundice] (42) 962
Garvin, A., [Lung volume] (52) 268
Gask, G. E., [Wounds of chest] (1) 196
Gatti, L., [Paralysis from air shock] (67) 1267
Gautier, P., [Functional capacity of liver] (76) 134
Gavron, J. L., [Absorption of mercury] *142
Gay, F. P., [Meningococcus carriers] *215
Gazzotti, L. G., [Fracture and dislocation of pelvis] (47) 350
Geiger, J. C., [German measles] *1818
Gellhorn, G., [Unilateral defect of tube and ovary] (11) 192, [Syphilis and surgery] (111) 1894
Gelpke, L., [Tuberculous ascites] (69) 964
Genoese, G., [Cystic point and typhoid] (83) 1899
Geraghty, J. T., [Congenital hydronephrosis] 1976
Gerstenberger, H. J., [Scurvy] (7) 955
Gettler, A. O., [Wood alcohol] *145
Ghiron, M., [Bacillary diarrhea] (77) 1640
Gianturco, G., [Hypospadia] (77) 1341
Gibbon, J. H., [Gallbladder infections] (3) 1792
Gibson, A. G. [Inoculation against typhoid] (15) 1400
Gibson, W. S., [Phlyctenular conjunctivitis] (1) 568
Giffin, H. Z., [Urobilin and urobilinogen] (8) 1498
Gilbert, G. B., [Transplantation of tuberculous lymph nodes] (35) 884
Gill, A. B., [Spastic paralysis] (9) 1890
Gillette, H. H., [Types of pneumococci] *836
Gilmour, J. [Transportation of wounded] (61) 487
Gimbert, [Tuberculosis and war gases] (75) 817
Gimbert, H., [Streptococcus septicemia] (17) 272
Ginestous, E., [Eye after typhoid vaccination] (67) 578
Gismondi, A., [Fuchsin in skin disease] (44) 350, [Abdomen in infants] (60) 659, [Rachitis] (64) 1405
Githens, T. S., [Blood clotting] 1115
Giugni, F., [Hemorrhagic purpura] (79) 1640
Givens, M. H., [Stomach contents of pellagrins] (4) 955, [Calcium and magnesium metabolism] (41) 1567, [Dried vegetables] *1743
Gjessing, H., [Idiosyncrasy to mercury] (126) 1272
Glénard, R., [War wounds] (65) 893
Glogau, O., [Ozena] (73) 1980
Godet, [Development of nervous system] (30) 890
Godlewski, H., [Measles] (39) 962
Goiffon, R., [Colon hemorrhage] (28) 736, [Enteritis] (30) 2057
Goldberg, B., [Herpes zostor] *1061
Goldstein, H. I., [Acute endocarditis] (109) 346
Gomez, R. S., [Genital prolapse] (85) 424
Goodhart, S. P., [Muscular dystrophy] (37) 650
Goodman, C., [Operations on abdominal aorta] (65) 1794
Goodman, H., [Scleroderma diffusa] (53) 1334
Goodwin, G. M., [Kidney function after mercury poisoning] *85
Gordon, A., [Neurotics] (89) 653
Gordon, W., [Deep inspiration and murmur of aortic regurgitation] (8) 1123
Gorgas, W. C., [A. M. A. war service] 697, [Call to A. M. A.] 1101, [Address] 1924, 1932
Gorini, C., [Ascending cultures] (51) 1404
Gosman, G. H. R., [Flatfoot] (67) 487
Goto, K., [Nitrogen metabolism] (31) 1259
Goubeau, [Arsenobenzol] (62) 1041
Gougerot, [Spider bites] (35) 421
Gouin, M. J., [Roentgen treatment of tinea] (66) 817
Gould, A. G., [Antiphlogistine] 557
Gould, A. P., [Modern antiseptics] (4) 59
Goyanes, J., [Endemic goiter] (107) 1270, (99) 1510, (83) 1987
Goyena, J. R., [Hyperpepsia and hyperchloridemia] (87) 740, [Uremic meningitis] (88) 895
Gradwohl, R. B. H., [Cardiac and renal disease] (103) 1894
Graham, E. A., [Prostatectomy] (99) 958, [Bacillus mucosus capsulatus skin infection] (107) 1191
Graham, R. R., [Anthrax] *671
Grandy, C. C., [Roentgenography] *1516
Graves S., [Wassermann reactions] *1751
Gray, H., [Poliomyelitis] (41) 1260
Gray, H. M. W., [Gas gangrene] (4) 1503
Green, A. S., [Dichloramin-T in eye infections] *1212
Green, F. R., [Equipment of medical officer] 1469
Green, L. D., [Dichloramin-T in eye infections] *1212
Greenwood, A., [Eyes of the army] *2002

Greer, A. E., [Artificial pneumothorax] *1518
Greer, V. D., [Intradermal reactions to proteins] (17) 55
Greggio, E., [Grafting operations] (52) 575
Grégoire, R., [Swollen calf after wounds] (54) 576
Greig, E. D. W., [Mercuric chlorid in enlarged spleen] (17) 1192
Grenet, H., [Rat-bite disease] (41) 1506
Greve, C. H., [Osteo-arthropathy] (105) 1342
Grey, E. G., [Postural activity of stomach] (16) 808
Grijns, G., [Tropical soil] (110) 1804
Gross, G., [Early suture of wounds] (54) 61, [Primary suture] (45) 1266, (29) 2057
→Grossman, M., [Tabes] (79) 886
Gruber, C. M., [Epinephrin and blood flow] (19) 808
Guaccero, A., [Varicose veins] (51) 1984, [Talipes] (32) 2058
Gudin, [Operations on digestive tract] (45) 738
Guemes, A., [Suprarenal virilism] (75) 353
Guggisberg, H., [Maternity tetany] (68) 495
Guglialmelli, L., [Tests with fluorene] (112) 819
Guglielmetti, J., [Toxicity of emetin] (51) 892
Guião, A. de F., [Chlorids in pneumonia] (81) 1986
Guild, S. R., [Deafness] (81) 418, (79) 1121
Guillain, G., [Sphincters with shell shock] (50) 815, [Meningeal hemorrhage] (26) 1337, (38) 1638, [Concussion of spinal cord] (38) 1982
Guillot, M., [Fractures] (48) 962
Guiral, R., [Iodin in surgery of eyes] (79) 1986
Guisez, [Laryngotracheal wounds] (53) 1267
Guizzetti, P., [Typhoid mortality] (53) 1127
Gunning, R. E. L., [Epinephrin and urine] (21) 1332
Gunson, E. B., [Glandular enlargements and infection] (3) 655
Gurgel, N., [Kidney stones] (62) 423
Gusman, T., [Meningitis simulating malaria] (47) 198
Gustetter, A. L., [Superfetation] *20
Gutmann, R. A., [Malaria] (37) 1799
Guye, G. A., [Ileus from enlarged glands] (67) 494
Gwathmey, J. T., [Analgesia] *993

H

de Haas, A. K. J., [Atropin in bradycardia] (127) 1046
Haas, S. V., [Hypertonic infant] (2) 1566
Hacker, H. P., [Hookworm infection] *499
Hackett, F. J., [Measles] 728
Hadwen, S., [Eosinophilias] (47) 1261
Hagen Torn, I. E., [Palpation of appendix] (100) 135, [Hernia] (98) 1576
Haggard, H. W., [Carbon dioxid capacity of blood] (61-64) 957, [Circulation] (38) 1892, [Breathing and circulation] (39) 1892
Haggard, W. D., [Intestinal obstruction] 1330
Haglund, P., [Good functioning in hip joint] (121) 66
Haines, W. D., [Ether in peritonitis] 415
Haines, W. H., [Syphilis] *370
Hale, G. D., [Antityphoid vaccine] (140) 271
Hale, H. E., [Medical Advisory Boards] 721
Hall, A. J., [Traumatic pericarditis] (24) 130, [Ophthalmoplegia] (15) 1796
Hall, M. C., [Anthelmintic medication] (123) 654, [Oil of chenopodium] (43) 1892
Hall, R. G., [Rolling crutch] *666
Hallez, G. L., [Meningitis] (55) 1040, [Ligation for causalgia] (37) 1982
Hallock, F. M., [Multiple sclerosis] (103) 1501
D'Halluin, P., [Rat-bite disease] (47) 1639
Halpin, J. A., [Tropical ulcers] (154) 271
Halsey, R. H., [Digitalis in auricular fibrillation] (17) 1033
Hamburger, F. J., [School hygiene] (106) 135
Hamburger, O., [Calomel for pruritus] (110) 1510, [Duplicate cases] (61) 2060
Hamburger, W. W., [Pneumonia] *915, [Streptococcus] *1758
Hamelberg, J. M., [Albuminuria] (108) 1577
Hamilton, A. S., [Industrial poison] *2004
Hamilton, H. C., [Oil of chenopodium] (43) 1892
Hammett, F. S., [Growth capacity] (12) 1332
Hannema, L. S., [Hemolysis with anemia] (95) 425
Hansen, S., [Test for urobilin in urine] (103) 896
Hansson, A., [Intestinal cysts] (103) 498
Hanzlik, P. J., [Salicyluric acid in urines] (87) 191, [Cotarnin] (51) 732, [Veratrum] (93) 887
Hardoy, P. J., [Epinephrin in heart block] (54) 277
Hardt, L. L. J., [Intestinal obstruction] (46) 651, [Gastric pain] *837
Harpster, C. M., [Paraffin paper] *1763
Harrar, J. A., [Causes of death in childbirth] (4) 342
Harrington, S. W., [Tumors of urinary bladder] (100) 733
Harris, C. H., [Profits in patented products] 2047
Harris, M. L., [Examination of registrants] *157, [Appeal board and draft] 806
Hartenberg, P., [Paralysis from disuse] (67) 61
Hartley, J. H., [Phlebotomus fever] (4) 1570
Hartley, J. N. J., [Flavine] (8) 419, [Delayed primary suture] (20) 1504
Hartman, F. W., [Splenic anemia] (142) 271, [Antityphoid vaccine] (140) 271
Hartmann, H., [Extraction of bullet in heart] (34) 891
Hartwell, J. A., [Chlorin antiseptics] (40) 1500
Hashimoto, H., [Vomiting as cause of hemorrhagic erosion] (11) 318
Haskins, J. B., [Thyroid surgery] 1330
Hassin, G. B., [Sacral tabes] *755
Hatcher, R. A., [Accidents from anesthetics] 258
Hatton, E. H., [Penetrating wounds] *155
Haughwout, F. G., [Intestinal spirochetes] (70) 957, [Coccidiosis] (119) 1262
Haupt, W. H., [Brief contributions] 1254
Havercampe, C. W., [Ankylostoma] (72) 1189
Hawes, J. B., Jr., [Sanatoriums] (15) 416
Hawley, G. W., [Traction stirrup] *22
Haycraft, J. B., [Soap and water in wounds] (14) 572
Hayd, H. E., [Thyroid in gynecology] (25) 192
Hazen, H. H., [More contract surgeons] 1184, [Duties of dermatologist] *1989
Heald, C. L., [Artificial respiration] *1063
Heard, J. D., [Rhythm exhibiting R-P intervals] (6) 955
Hébert, P., [Parameningococci] (46) 1040
Heden, K., [Diabetes insipidus in syphilitic] (123) 66
Hedenius, I., [Erythrocytosis vs. leukocytosis] (124) 66
Hedlund, J. A., [Fracture of jaw and nose] (118) 820
Hédon, E., [Transfusion of citrated blood] (34) 1125
Hedren, G., [Abdominal injury in newly born] (95) 1988, [Intracranial hemorrhage] (96) 1988
Heffter, O. H., [Blood pressure in postoperative shock] (119) 959
Heiberg, P., [Death rate in Copenhagen] (134) 1643
Heilskov, C., [Internal ear in mumps] (102) 426
Heim, F., [Uremia] (65) 964
Helman, H., [Characteristic sign of poliomyelitis] (23) 55
Heineberg, A., [Repair of cervix] (20) 1499
Heise, F. H., [Tuberculosis] (37) 884
Heiser, V. G., [Italian medical service] *24
Heist, G. D., [Poliomyelitis] (41-43) 570
Heitz, J., [Typhus] (38) 961, [Aortic insufficiency] (33) 1571
Helzer, W. L., [Public health nurse and tuberculosis] (96) 733
Hektoen, L., [Roentgen ray and antibody production] (75) 193, (39) 180, [Cocci in nervous system in poliomyelitis] (81) 193, [Nervous system in poliomyelitis] (18) 486, [Precipitin test] *1273
Hellman, T. J., [Lymphogranulomatosis] (124) 136
Helweg, H., [Wanderlust] (131) 1272
Hempstead, B. E., [Recurrent paralysis] *1
Henao, E., [Yellow fever] (90) 1044
Henderson, J. T., [Tuberculosis and renal function] (12) 125
Henderson, M. S., [Recurrent dislocation] *1, [Tendon transplantation] *1456
Henderson, Y., [Carbon dioxid capacity of blood] (61-64) 957, [Circulation] (38) 1892, [Breathing and circulation] (39) 1892
Henes, E., Jr., [Cholesterol in blood] 50
Henrichs, J., [Ataxia] (132) 1200
Henrichsen, J., [Invagination from tumor] (89) 1987
Henriksen, K. Z., [Growth of school-children] (111) 742
Hermosa, A. L., [Diagnosis of pregnancy] (68) 423
Herrick, J. B., [Angina pectoris] *67, [Coronary thrombosis] 1030, 1887
Herrick, W. W., [Meningitis] *227, (18) 1398
Herrman, C., [Measles] (41) 344
Herrold, R. D., [Meningococcus carriers] *82, [Renal infections] *1144
Hertz, P., [Congenital neuroblastoma] (73) 278
Hesnard, A., [Reaction of degeneration] (56) 132, [Nerve surgery] (41) 1265
Hess, A. F., [Tuberculosis preventorium] (16) 416, [Diet of negro mother] *900
v. Hess, C. L., [Poliomyelitis] (40) 1260
Hess, J. H., [Diagnosis of age of fetus by roentgenograms] (65) 652
Hewlett, A. W., [Tyramin] *1810
Higgins, W. H., [Mental deficiency] *74, [Syphilis and mental deficiency] (6) 1498
Hijmans, C., [Separation of epiphysis] (118) 967
Hill, R. L., [Milk] (33) 1188
Hiller, A., [Blood sugar in diabetes] (27) 343
Hinchey, F., [Vaginal drainage] 1888
Hindman, S. S., [Serum diagnosis of syphilis] 1561
Hinman, F., [Urethral cannula] *1297
Hirose, K., [Diuretics and blood pressure] (31) 1033, [Platelet count and vasoconstriction] (22) 1891
Hitchens, A. P., [Meningococci] 1329
Hitzrot, J. M., [Splenectomy] (13) 1890
Hoagsdon, J. S., [Red Cross] 1184
Hodge, E. B., [Dichloramin-T] *605
Hoessly, H., [Paralysis after poliomyelitis] (44) 1404, [Topography of peripheral nerves] (45) 1404, [Function of patella] (46) 1404
Hoffer, G., [Dermatitis] (71) 1801
Hoffman, F. L., [National leprosarium] 186
Hofvendahl, A., [Nasal reflex neuroses] (113) 1578
Höjer, A., [Albuminuria with jaundice] (103) 580
Holland, E. D., [Vaccine therapy] (92) 733
Hollande, P., [Urine findings] (41) 737
Holmgren, G., [Bárány's syndrome] (127) 66
Holst, P. M., [Diphtheria] (130) 1200
Homan, G., [Lice] 1395, 1881
Hon, C., [Breeding mice] *1225
Hoogslag, W., [Liver syphilis] (99) 895
Hoogveld, W. P. J., [Spiral incision of varices] (95) 497
Hooker, D. R., [Iodids and bromids] (90) 887
Hooper, A. N., [Treatment of wound shock] *526
Hopkins, J. G., [Injections of hemolytic streptococci] (46) 268
Hopkins, P. B., [Thorium and renal parenchyma] (35) 2055
Hoppe, H. H., [Delirium tremens] (80) 886, [Goiter] (62) 1569
Hornor, A. A., [Diabetes] (6) 267
Hornstein, M., [Triplets] *224
Hough, A. G., [Herpes zoster] 1255
Hough, T., [Medical school recognized in New York] 1396
Houssay, B. A., [Epinephrin in heart block] (54) 277, [Antivenom serums] (96) 819, [Poisonous plants] (100) 819, [Pituitary body and polyuria] (96) 966, [Pituitary tumors] (100) 1044
Howard, C. P., [Iron metabolism of hemochromatosis] (20) 125
Howe, L., [Hereditary eye defects] *1994
Howes, W. B., [Cell poison from sputum] (17) 416
Huber, H. L., [Fat embolism] (129) 58
Huber, J., [Resisting power of blood corpuscles] (48) 1639
Huchon, G., [Genital complications of typhoid] (60) 1340
Hudson, B., [Pyrexia] (21) 656
Huenekens, E. J., [Rickets] (60) 56
Hugger, C. C., [Exudate in pneumonia of typhoid] (13) 1033
Hughes, D. M., [Laminectomy] (3) 1192
Hughes, G. S., [Wounds of chest] (23) 491
Hughes, T. A., [Malaria] (17) 1571
Huhner, M., [Improvement on Bangs sound syringe] *154
Hull, A. J., [Paraffin treatment of burns] (4) 196, [Flavine] (8) 889
Hume, E. H., [Venereal diseases] 338
Hume, E. M., [Antiscorbutic value of milk] (13) 490
Hume, W. E., [Tachycardia] (23) 1264, [Cardiac disabilities] (19) 1504
Humiston, C. E., [Clinics at Chicago session] 1607
Hunner, G. L., [Bladder ulcer] *203, [Ureteral stricture] (43) 345
Hunt, C. J., [Nephritis] 2050
Hunt, J. R., [Exhaustion pseudoparesis] *11, [Diataxia cerebralis infantilis] (2) 1498
Hunt, R., [Vasodilator reactions] (14) 808
Hunter, A., [Placental transmission of creatinin and creatin] (30) 1567
Hunziker, H., [Goiter] (83) 1196
Hurd, E. F., [Yearly physical examinations] 52
Hurwitz, S. H., [Albumin-globulin in antitoxic immunity] (74) 193, [Blood proteins] (38) 486, [Polycythemia] *1143
Hutcheson, J. M., [Vaccine for asthma] (10) 2053
Hutchings, R. H., [Reconstruction and rehabilitation] 1928
Hutchinson, W., [Chest wounds] (16) 959
Hutinel, V., [Meningitis in inherited syphilis] (50) 1983
Hyde, I. H., [Music and cardiovascular system] (12) 1566

I

Ibañez, J. A. H., [Gastric ulcer] (93) 1576, [Duodenal alimentation] (104) 1641
Ichikawa, K., [Pathogenesis of carcinoma] (38) 730
Iddings, J. W., [Tonsillectomy and adenectomy] (42) 1399
Inada, R., [Spirochetosis icterohemorrhagiae] (82) 1043
Infantozzi, J., [Puerperal endometritis] (111) 1642
Ingals, E. F., [Angina pectoris] *969
Ingebrigtsen, R., [Grafting operations] (52) 575
Ipsen, J., [Surgery of arteries] (127) 1643
Ireland, P. M., [Toxin of B. welchii] (74) 127
Irons, E. E., [Arthritis in swine] (69) 127, [Streptococcal infections] *687, [Internist and draft] 805
Irvine, H. G., [Venereal diseases] *150
Isaacson, V. I., [Muscular dystrophy] (37) 650, [Glucose in urine] (74) 886, [Blood sugar] *1131
Isenschmid, R., [Drugs that influence temperature] (36) 274
Itakura, T., [Fish poison] (60) 277
Ito, H., [Fate of staphylococcus pyogenes aureus] (76) 127

J

Jack, H. P., [Bladder drainage] *1225
Jack, W. R., [Metastatic cancer of bone marrow] (7) 1038
Jackson, D. E., [Allergic phenomena and death] (52) 1568
Jackson, L., [Cocci in nervous system in poliomyelitis] (84) 193, [Poliomyelitis] (48) 486
Jacobs, J., [Dehydratation in diabetes] (30) 1338
Jacobsen, A., [Safety match box dermatitis] (111) 1510
Jacobson, C., [Neoplasm of fallopian tube] (134) 58
Jacobson, E., [Wassermann test] *2002
James, W. B., [Health and army uniform] (58) 1400
James, W. D., [Curved needles] 1788
Janeway, H. H., [Radium in cancer of lip] *1051
Janeway, T. C., [Blood serum as vasoconstrictor] (21) 1891
Janney, N. W., [Muscular dystrophy] (37) 650, [Blood sugar] *1131, [Diabetes] *1282
Japiot, P., [Fracture of jaw] (45) 575
Jaquet, A., [Hill climbing] (36) 1125
Jarløv, [Hydrogen ion content of blood] (90) 661
Jarløv, E., [Heart action in soldiers] (107) 498
Jauregui, F., [Toxin extracted from tubercle bacilli] (86) 740
Jchok, G., [Tuberculosis and weight] (80) 1196
Jean, G., [Resection of joints] (64) 1194
Jeanbrau, E., [Transfusion of citrated blood] (34) 1125
Jeanneret, L., [Heliotherapy and pigmentation] (59) 199
Jimonez, R. M., [Staphylococcus septicemia] (83) 496
Job, E., [Gas gangrene] (49) 962, [Liver abscess] (25) 1337
John, H. J., [Thyroidectomy bandage] *23
Johns, C. O., [Stizolobin] (58) 1978
Johnson, A. E. W., [Surgery in typhoid] (16) 130
Johnson, R., [Tumor of breast] (4) 812
Jona, G., [Malaria] (64) 201, [Hospital fare without alcohol] (40) 275
Jona, J. L., [Duodenal ulcer] (20) 1337
Jonas, L., [Renal disease] (29) 1033
Jones, E. G., [Femoral aneurysm] (139) 58
Jones, H. M., [Histidin decarboxylating organisms in feces] (35) 570
Jones, R., [Orthopedic military surgery] (1) 572, [Disabled soldiers] (10) 1633
Jorge, J. M., Jr., [Fistulas in digestive tract] (88) 424, [Sarcoma of thyroid] (102) 1044, [Hypersecretion in parotid] (96) 1641
Jørgensen, G., [Leukocyte count in different positions] (89) 354
Joslin, E. P., [Diabetes] (6) 267
Josué, O., [Uremia] (49) 1040, [Rheumatism and heart disease] (47) 1800
Joyce, J. L., [Substitution of thumb] (9) 812
Juarros, C., [Unilateral paralysis agitans] (89) 741
Judd, E. S., [Ureters opening extravesically] 415, [Tumors of urinary bladder] (100) 733, [Trauma and laryngeal nerves] (25) 1119, [Recurrences after biliary operations] (56) 1500
Judd, J. R., [Wounds of knee] (84) 571

K

Kahn, M., [Metabolism of asthma] (15) 1398
Kamp, J., [Focus of infectious jaundice] (93) 202
Kaneko, R., [Spirochaeta icterohemorrhagiae after serum treatment] (81) 652
Kanter, A. E., [Stability of secretin] 116
Kantor, J. L., [Air in digestive tract] (11) 2058
Kantor, L., [Poliomyelitis] (98) 819
Kapsenberg, G., [Meningitis] (107) 1577
Karlher, H. C., [Slide rule] *678
Karsner, H. T., [Transfusion] *769, [Analgesia] *993, [Wounds and endocarditis] 1888
Katsunuma, S., [Pigment cells in pia mater] (97) 741
Kaunitz, J., [Mumps meningitis] *1448
Kay, W. E., [Tyramin] *1810
Keen, W. W., [Contributions for Belgian and French physicians] 338, 873, 1788, ["Why is my soldier sick"] 1542, [Brain tumor] *1905
Keilty, R. A., [Intestinal toxemia] *512, [Ankylostoma] (72) 1189
Keith, A., [Wolff's law of bone transformation] (30) 961, [Anthropology] 1020
Keith, N. M., [Experimental hydronephrosis] (16) 125
Kellogg, J. H., [Repair of ileocecal valve] (13) 568
Kelly, H. A., [Radium in tumors] 1976
Kelly, H. E., [Sectarianism] 648
Kolly, J. B., [Scarlet fever] (71) 886
Kennedy, G. L., [Stammering] 644
Kennedy, J., [Pancreatectomy and tissue catalase] (19) 125
Kent, S., [Neuritis and myalgia] (41) 60
Ker, C. B., [Serum sickness in meningitis] (18) 130
de Kerdrel, [Transfusion in anemia] (39) 891, [Malaria] (50) 1800
Kholtzoff, B. N., [Ether-oil by rectum] (64) 277
Kidner, F. C., [War surgery] *1201
Kilgore, E. S., [Base hospital training] *1226
Kimberlin, A. C., [Gallbladder diseases] (42) 268
Kindley, G. C., [Syphilitic alopecia] *86
King, J. T., Jr., [Auscultation of pulmonary apices] (68) 488
Kirk, J., [Eye in trench nephritis] (4) 490
Kirmisson, E., [Pituitary treatment of paralysis] (33) 891, [Coxa vara] (25) 1265
Kisel, A. A., [Problems of the moment] (101) 135
Kissmeyer, A., [Spirochete] (90) 202
Kjelgaard, [Anaphylaxis] (60) 2060
Kjølstad, S., [Goiter] (125) 1272
Klauder, J., [Syphilis] 729
Kligler, J., [Antiseptics in organic compounds] (33) 1259
Kling, C., [Diphtheria and diphtheroid bacilli] (131) 66, [Scarlet fever] (122) 968
Klinkert, D., [Constitutional eosinophilia] (114) 820, [Convalescence eosinophilia] (55) 2059
Klopper, Z. D., [Lavatory seat] *1457
Klugh, G. F., [Meningococcus] *684
Knoop, J. S. A. M., [Edema of uterine cervix] (93) 1130
Knowles, R., [Quinin acid hydrobromid in malaria] (9) 1637
Knox, H. E., [Carrel-Dakin solution] (75) 811
Kocher, A., [Goiter] (37) 274
Kocher, T., [Goiter] (37) 274
Kohn, L. A., [Triple sugar modification] (80) 127
Kohn, R., [Pneumonia] 1496
Kolmer, J. A., [Pneumonia] *14, [Absorption of mercury] *142, [Poliomyelitis] (41) 570, [Pneumonia] (75) 957, [Mercury in tissues] *1290, [Immunity] 1328, [Normal serum and meningococci] 1329, [Antibody production] 1496, [Transfer of antibodies to spinal fluid] 1498, [Quinin and pneumotoxin] (37), 1634, [Pneumonic lungs] (36) 1634, [Pneumococcus infection] (38) 1634
Kon, Y., [Spirochetes] *1522
Koopman, J., [Diagnosis of pregnancy] (40) 1403
Kopp, J., [Goiter] (37) 274
Kosakay, M., [Immune hemolysin] 1497
Koser, S. A., [Bacterial spores in animal body] (83) 127
Kostyamin, N. N., [Serodiagnostic test of flour] (100) 741
Kotzareff, A., [Melanosarcoma] (7) 272, [Hernia] (69) 1508
Krabbe, K. H., [Precocious puberty] (102) 580
Kraus, I. R., [Production of antitoxin] (77) 1406
Kraus, R., [Poliomyelitis] (98) 819, [Spirochetes] (81) 1406
Kraus, W. M., [Trigeminal nerve] *1452
Kremers, E. D., [Vaccinations] (62) 1635
Kreuscher, P. H., [Blood transfusion] *223
Kreutzmann, H. A., [Nucleated red corpuscles] (78) 652, (69) 1036
Kritchewsky, J. L., [Anaphylactic shock] (32) 570
Kruglevsky, N. A., [Shock] (97) 1576
Krumbhaar, E. B., [Electrocardiographic observations in goiter] (2) 955
Krumwiede, C., Jr., [Triple sugar modification] (80) 127, [Pneumonia] *513, [Brilliant green and vaccine virus] (34) 570, [Precipitin antigen from bacteria] (44) 731, [Precipitin antigen] 1329
Kummer, E., [Goiter] (37) 274
Kurata, K., [Hemolysis in hemoglobinuria] (6) 347
Kurata, S., [Antitrypsin and cancer] (3) 347
Kuriyama, S., [Thyroid feeding and liver glycogen] (74) 417, [Epinephrin in suprarenals] (75) 417

L

Labbé, M., [Kala-azar] (37) 1638, [Crippled respiration] (44) 1639, [Nonrenal edema] (36) 1982
Labit, [Diphtheria] (37) 656
Laborde, A., [Radio-active water] (69) 817
Labro, P., [Wounds of chest] (24) 890
Lacapère, [Localization of syphilis lesions] (61) 1041
Lacombe, M., [Gonorrheal urethritis] (50) 738
Lacy, F. W., [Decolorizing and staining blood films] 1486
Lafaye, C. B., [Hot air in wounds] (43) 1265
Lafora, G. R., [Dementia praecox] (94) 741, [Pituitary insufficiency] (89) 1043
Lafosse, P., [Valvular disease] (24) 2057
Lainé, D. T., [Medicine in Cuba] (99) 1269
Lakeman, C. E., [Disabled soldiers] 2014
Lamb, D. S., [Reclamation of used alcohol] 49
Lambert, A. C., [Amebic dysentery] (8) 734, [Address] 1938, [Red Cross needs physicians] 1949, [Trench fever] 2052
Lancelin, R., [Meningococcus epididymitis] (22) 272
Landa, E., [Deficiency edema] (69) 423
Landis, H. R. M., [Tuberculosis] *362
Landsteiner, K., [Polymyositis] (132) 66
Lane, A., [Address] 1933
Lane, W. A., [Fractures] (15) 491
Langdon, H. M., [Bárány chair tests] 1560
de Lange, C., [Familial splenomegaly] (1) 1398
de Langen, C. D., [Acclimatization] (120) 1271
Langeron, L., [Enterococcus sepsis] (38) 1265
Langstroth, L., [Focal infection] (5) 955
Lannois, M., [Radium in cancer of tonsil] (26) 273
de Lapersonne, F., [Chloramin] (70) 1042, [Foreign bodies in eye] (18) 1123
"Lapius, S. Q.," [Cactina Pillets] 185, [Ammonol and Phenalgin] 337, [Follows' Syrup] 478, [Shotgun nostrums] 642, [Neurosine] 1251
Larché, J. E., [Syringe for aspiration] (31) 1798
Larkin, J. H., [Wassermann reaction] *1589
Laroche, G., [Meningitis] (38) 656, [Typhoid vaccination] (46) 1573
Larralde, A., [Pneumothorax] (83) 579
Larsson, K. O., [Spasmophilia and milk] (133) 66
Laubry, C., [Valvular defects and army service] (34) 421, [Nephritis] (37) 1572
Laurent, [Localization of syphilis lesions] (61) 1041
Laurent, O., [Extraction of projectile] (35) 198
Lawrence, C. H., [Pneumonia] (37) 809
Lawrence, J. S., [Aerobic bacteria in wounds] (74) 732
Lawrence, T. W. P., [Tumor of breast] (4) 812
Lawrence, W. S., [Uterine fibromyomas] (129) 271
Leake, J. P., [Health in stonecutting industry] 1441
Lebon, H., [Compass for locating foreign bodies] (44) 422, [Transparency of lung] (61) 963
Lebredo, M. G., [Typhoid] (92) 1269
Leclerc, G., [Resection of elbow] (47) 575
Le Clerc, R., [Infectious pyelitis] (43) 198
Leclercq, A., [Heart disease] (56) 576
Lecoq, [Bread] (30) 1638
LeCount, E. R., [Angina pectoris] *974
Lee, F. S., [Hours of work] 724
Lee, R. G., [Filarial hematuria] (87) 966
Lee, R. I., [Donors for transfusion] (7) 59, [Light casualties] (71) 1189
Lee, W. E., [Dichloramin-T] (5) 568, (86) 571
Leenhardt, [Malaria] (58) 494
Loffmann, H., [Oleomargarin] 480
Le Fort, R., [Projectiles in mediastinum] (77) 1899
Le Fur, R., [Auto-bone flap for skull] (45) 1800
Léger, [Regulation of sale of proprietaries] (37) 492, [Malaria] (50) 1800
Legueu, F., [Gangrene of bladder] (53) 1506, [Extraction of hairpin from bladder] (59) 1506, [Uremia] (63) 1574
Le Hello, [Serum in hemorrhage] (16) 348
Lehucher, [Rat-bite disease] (44) 1506
Leibinger, H. R., [Bismuth iodoform paste in fractures] (71) 56
Le Jemtel, M., [Grafting operations] (52) 575
Leland, G. A., Jr., [Radium in cervix cancer] (54) 193
Lemaire, H., [Malaria] (29) 1337
Lemaitre, R., [Primary suture of war wounds] (67) 1897
Lematte, L., [Dietetics and urology] (76) 1268
Lenoblo, E., [Alcohol in spinal fluid] (33) 421
Le Noir, [Measles] (35) 1338
Le Noir, P., [Examination with digestive diseases] (25) 349
de Léobardy, J., [Spirochete jaundice] (35) 1265
Leone, R., [Test for albumin] (70) 1340
Léon-Kindberg, [Detection of tuberculosis] (65) 61
Leporini, F., [Epidemic dropsy] (48) 1126
Leprince, [Bread] (30) 1638
Lereboullet, P., [Penny sign of pleurisy] (78) 817, [Diabetes insipidus] (74) 1268
Léri, A., [Lumbar rheumatism] (51) 1339, [Malarial hemiplegia] (59) 1897, [Rachitis] (60) 1897
Leriche, R., [Wounds of joints] (46) 493, [Grafting operations] (52) 575, [Joint fractures] (50) 1266, [Periosteum and bone formation] (49) 1639
Leroy, E., [Afebrile spirochete jaundice] (15) 272, [Febrile spirochetosis] (16) 272, [Walled-off meningitis] (22) 2057
Leschly, W., [Sugar in blood] (111) 1578
Lesieur, [Keloid and creosote] (43) 737
Lespinasse, V. D., [Vaso-epididymostomy] *448
Leven, G., [Tachycardia] (52) 1266
Lévi, L., [Neuro-arthritism with thyroid instability] (68) 1574
Levin, I., [Roentgen rays in cancer] (47) 1500
Levine, M., [Roentgen rays in cancer] (47) 1500
Levine, S. A., [Infarction of heart] (7) 267
Levy, A. G., [Blood in disordered heart action] (14) 59
Levy, I. J., [Wassermann reaction] *1589
Lévy, P. P., [Color reaction in blood cultures] (59) 815, [Spirochete jaundice] (35) 1265
Levy, R. L., [Thyroid secretion and cardiac vagus] (43) 650, [Measles] *1827
Lewis, D., [Burn causing necrosis of skull] (16) 955
Lowis, E. R., [Bárány chair tests] 1559, [Visual factors in aviation] 1625
Lewis, F. P., [Retinal hemorrhage] *1813, [Artificial eyes] 1882
Lewis, R. C., [Colorimeter] *679

Lewis, T., [Irritable heart] (15) 735, (2) 1503, [Neurocirculatory asthenia] (70) 1569
Lewisohn, R., [Emetin in cancer] *9, [Pyloric exclusion] (14) 1890
Leyva, L., [Tetanus] (126) 58
Leza, F., [Dilatation of duodenum] (96) 1342
Lhermitte, J., [Paralysis and contracture] (48) 738, [Severing of dorsal spinal cord] (32) 1403, [Concussion of spinal cord] (56) 1800
Lian, G., [Minor heart disease] (52) 738
Lichtenstein, A., [Blood in prematurely born] (135) 1046
Lincoln, W. A., [Renal rupture] *80
Lindeman, E., [Anemias] *1209, *1292
Lindhagen, E., [Notification of tuberculosis] (114) 136
Linossier, G., [Toxicity of eggs] (44) 1573
Lippman, C. W., [Gastro-enterostomy] (58) 345
Lipshutz, B., [Hypogastric artery] (19) 1890
Lipsitz, S. T., [Cantharides poisoning] (18) 125
de Lisi, L., [Motor reeducation] (57) 659
Litchfield, W. F., [Lungs after death from asphyxia] (20) 574
Litterer, W., [Streptothrix isolated from rat bite fever] (127) 271
Little, G. G., [Anesthetic machine] *1746
Litzenberg, J. C., [Graduate degree\ in obstetrics] 1976
Livermore, G. R., [Bladder symptoms] 1331
Ljungdahl, M., [Diphtheria and diphtheroid bacilli] (131) 66
Llanos, M. A., [Tumors of cecum] (91) 425
Lloyd, L., [Clothes louse] (20) 1895
Lloyd, S., [Floating kidney] (88) 1894
Lockwood, A. L., [Surgery of chest] (3) 734
Loeb, L., [Blood clots] (53) 810
Loeber, M., [Juvenile delinquents] (107) 1894
Loeper, [Glycemia] (40) 656, [Epinephrin test of heart] (75) 1195, (47) 1506
Loevenhart, A. S., [Sodium cyanid and respiration] (28) 343, [Reduced oxidation] (70) 1036
Loewenthal, N., [Eosinophilia after resection of sciatic nerve] (63) 494
Loiseleur, [Air to replace effusions] (38) 422
Lollini, C., [Pseudohermaphrodite] (69) 894
Lomholt, S., [Safety match box dermatitis] (111) 1510
Lommel, [Goiter operations] (57) 1267
Long, W. C., [Sulphomoglobinemia] (21) 1264
Longcope, W. T., [Circulating antibodies and serum disease] (66) 1036
Lopez, A. S., [Tuberculosis] (95) 1641
Lopez, C. J., [Dislocation of lens] (91) 135
Lopez, J. A., [Examination of recruits] (77) 353, [Rarefied air and intelligence] (85) 579
Lorenz, W. F., [Sodium cyanid and respiration] (28) 343
Lortat-Jacob, [Ligation for causalgia] (37) 1982
Loughlin, R., [Peanuts] (57) 956
Lovett, R. W., [Medical teaching] *1070
Lowe, E. C., [National licensure] 480, [Jaundice] (4) 1795
Lowrey, L. G., [Multiple sclerosis] (3) 883
Lozano, A. R., [Pneumonia] (88) 1043
Lubsen, J., [Nourishment of schoolchildren] (98) 579
Lucke, B., [Acute infections] *2006
Luden, G., [Cholesterol] (46) 56
Lumb, N. P. L., [Gonorrhea] (7) 1192
Lumière, A., [Contracture after tetanus] (50) 131, [Cerebral tetanus] (40) 492, [Healing of wounds] (80) 1899
Lund, P. M., [Roentgen diagnosis of bone disease] (96) 65
Lundsgaard, C., [Lung volume] (52) 268, [Oxygen in venous blood] (75-77) 652, [Blood pressure] (35, 36) 1259
Lusk, G., [Nutrition] *821, [Alcohol and work] 1628
Lutz, W., [Allergy with skin diseases] (35) 274
Luys, G., [Tunneling prostate] (21) 1123
Luzoir, J., [Ischemic contracture] (35) 1125
Lydston, G. F., [Testicle implantation] *907, [Prostatic adenomas] *1297
Lyle, W. G., [Occult blood in stools] (57) 417
Lynch, C., [Pneumonias] *1066
Lyons, R., [Triple typhoid vaccine] (93) 733
Lyter, J. C., [Acute rheumatic fever] (87) 57

M

MacAuliffe, L., [Wounds of skull] (59) 132
MacCallum, W. G., [Pneumonia] *1146
McCandlise, H. M., [Large calculus] *601
McCann, F., [Postoperative thrombosis] (1) 1192
McCann, G. F., [Mitochondria in poliomyelitis] (48) 268
McCartney, J. E., [Wound of liver and right ventricle] (12) 812
McClelland, J. R., [Bacterial spores in animal body] (83) 127
McClendon, J. F., [Detection of acidosis] *977
McClure, C. W., [Metabolism in gout] (26) 343
McClure, W. B., [Loss of water vapor through skin] (37) 1034
McCollum, E. V., [Pellagra producing diets] (58) 956
McCord, C. P., [Atropin test] *1435
McCoy, G. W., [Antipneumococcic serum] *1747
McCrae, T., [Pancreatitis in typhoid] 1791
McCrudden, F. H., [Progressive muscular dystrophy] (41, 42) 650, [Muscular dystrophy] *1216
McDonald, S., [Syphilis] (10) 572
McElroy, W. S., [Acidosis in shock] *846
MacFie, J. W. S., [Larbish] (16) 889
MacGilchrist, A. C., [How to administer quinin] (23) 60
Machado, R., [Leishmaniosis] (81) 1269
Macht, D. I., [Action of opium on digestive tract] (8) 191, [Papaverin in syphilis] (58) 269, [Absorption of drugs through vagina] (50) 732, [Iodids and bromids] (90) 887, [Absorption of drugs] (62) 1189, [Opium alkaloids] 1790, [Benzyl alcohol] 1790, (44) 1892
Macias, C. T., [Foreign body in bladder] (91) 1044
McJunkin, F. A., [Mononuclear cells of blood] (23) 343
Mackay, H., [Cutaneous disorders] (69) 957
McKendree, C. A., [Cancer of nasopharyngeal origin] (95) 1500, [Dystrophy] (101) 1501
Mackenzie, J.., [Address] 1932
MacLaren, A., [Closure of fecal fistulas] 265
McLean, E. H., [Meningococcus] *684
MacLean, N. J., [Pendulous abdomen] 414
McLester, J. S., [Analysis of blood] (67) 571, [Syphilis] (14) 1033
McMahon, F. B., [Cancer of lung] (5) 267
McMurtrie, D. C., [Red Cross Institute] 186, [War cripples] 338, [Rehabilitation] 2013
MacNeal, W. J., [Trench fever] *1597
McNee, J. W., [Nephritis] (1) 959
McNeil, A., Streptococcus oral sepsis] (56) 487
McNeile, L. G., [Desiccated placenta and lactation] (4) 1118
MacNider, W. deB., [Mercuric chlorid intoxications] (38) 1259
McPherson, R., [Eclampsia] (7) 342
MacRobert, R. G., [Lumbar puncture headache] *1350
McSweeny, E. S., [Tuberculosis] *368
McWhorter, G. L., [Detection of gallstones] *757, [Sigmoidoscope] *1365
Madigan, J. J., [Fröhlich's syndrome] *669
Madsen, E., [Vitamins] (58) 2060
de Magalhães, A. F., [Adhesion of arm to thorax] (73) 740
Maheu, J., [Gonorrhea] (47) 962
Maillard, L. C., [Tests of water] (28) 1265
Maingot, G., [Lung cavities] (53) 1339
Maisonnet, [Wounds of joints] (73) 133
Maitland, H. B., [Localization of streptococcus viridans] (49) 268
Mallein, E., [Genito-urinary-dermatologic centers] (40) 131
Mallié, H., [Meningitis] (57) 1573
Malling, B., [Color perception] (109) 742, [Optic neuritis] (114) 1804
Malling, K., [Deforming spondylitis] (101) 1510
Mallory, W. J., [Atonic dyspepsia] *1412
Mally, [Traumatic monomyoplegia] (71) 133
Malone, J. Y., [Sodium cyanid and respiration] (28) 343
Malone, R. H., [Streptococci] (58) 1120
Manes, A. J., [Vacuum extraction of cataract] (90) 1900
Manheimer, W. A., [Swimming pools] *1991
Mann, F. C., [Dakin's solution] *840, [Trauma and laryngeal nerves] (25) 1119
Mann, H., [Circulation during convalescence] (27) 1891
Mann, W. L., [Sanitation of barracks] *996
Manny, F. A., [Undernutrition] 1257
Mansilla, S. G., [Sympathetic ophthalmia] (114) 1045
Mante, D., [Typhus] (68) 1042
Mantoux, C., [Lung cavities] (53) 1339
Mantovani, [Tar for wounds] (65) 659
Manzini, [Tar for wounds] (65) 659
Maranon, G., [Typhus at Madrid] (105) 65
Marchand, D. P., [Pituitary extract in obstetrics] (80) 1509
Marcorelles, [Nonrenal edema] (36) 1982
Marcussen, S., [Test for urobilin in urine] (103) 896
Marden, K., [Types of pneumococci] *836
Marfan, A. B., [Diseases of digestive system] (49) 199, [Milk in infant feeding] (54) 199, (47) 657
Maria, P. L., [Hematoma in ear] (37) 131, [Gastric hemorrhage] (36) 1265
Marine, D., [Streptococcal infections] *687, [Effect of phrenic sympathetic union on thyroid] (15) 808
Marinucci, R. K., [Syphilis and tuberculosis] (43) 350
Marlow, S. B., [Aneurysm of abdominal aorta] (5) 1498
Marmol, D. G., [Hypernephroma] (93) 1269
Marotta, R. A., [Amebiasis] (65) 352
Marre, L., [Nephritis] (37) 1572
Marris, H. F., [*Thrombosis*] (6) 419, [Tachycardia] (9) 2056
Marsan, [Swollen calf after wounds] (54) 576
Marshak, M. I., [Double spontaneous pneumothorax] *1518
Marshall, H. W., [Back troubles] (41) 885
Martel, [Eggs] (33) 1638
Martin, A. P., [Stones in ureters] (92) 1576
Martin, C., [Prostatectomy] *1287
Martin, C. J., [Dysentery bacilli] (3) 1795
Martin, E. G., [*Strength of women*] *140, [Muscular strength] (15) 1978
Martin, F. H., [Council of National Defense] 565
Martin, H. G., [Sodium cyanid and respiration] (28) 343, [Reduced *oxidation*] (70) 1036
Martin, H. H., [Gallbladder surgery] (44) 268
Martin, L., [Antispirochete serotherapy] (40) 962
Martin, P., [Asphyxia from war gases] (63) 578
Martin-Du Pan, C., [*Intermittent* kinking of ureter] (80) 134
Martinet, A., [Tachycardia] (48) 493
Martinez, E. M., [Tramps] (91) 579
Martinez, F. F., [Tropical dysentery] (23) 814, [Beriberi] (95) 1803
Martinez y Gonzales, J., [Gastro-enterostomy] (84) 134
Martini, T., [Abscess of occipital lobe] (93) 818
Martiri, A., [Mirror phobia] (77) 201, [Pseudo-agglutination] (60) 423, [Osteomyeloma] (81) 495
Masci, B., [Anal fistula] (82) 1899
Mason, E. H., [Atropin test in typhoid] (19) 343, [Nephritis] (38) 650
Mason, J. M., [Injuries of kidney] 341, [Trained nursing] 1882
de Massary, E., [Malarial meningism] (42) 891
Massie, R., [Brilliant green] (46) 1895
Masson, J. C., [Skin grafting] *1581
Mastin, E. V., [Mercury in tissues] *1290
Mathers, G., [Cocci in nervous system in poliomyelitis] (84) 193, [*Poliomyelitis*] (48) 486
Mathieu, A., [Duodenal ulcer] (25) 814, [Diarrhea] (26) 814, [Inflammation of intestines] (30) 1505
Mathieu, R., [Spirochetosis] (22) 1124
Matsumoto, S. I., [Punctiform keratodermia] (29) 2054
Matsunami, T., [*Normal* serum and meningococci] 1329
Matsuo, I., [Vegetative nervous system in typhoid] (35) 1033
Matti, H., [Harelip] (55) 739
Mauclaire, P., [Vulvovaginal pruritus] (8) 272
Mauger, N., [Tachycardias] (48) 1040
Maurel, E., [Bolting of wheat flour] (35) 575
Maxcy, K. F., [Intraperitoneal injection of saline solution] (2) 267
Mayeda, T., [Elasticity of bone] (82) 353
Mayer, C. P., [Hookworm] (74) 1129
Mayer, E., [Heliotherapy] (36) 884
Mayer, L., [Drainage of vertebrae] *593, [*Anatomy*] 873
Mayers, L. H., [Pneumonia] *915
Mayhew, J. M., [Gonococcus infection] *1223
Mayo, C. H., [Jejunostomy] (58) 56
Mayo, W. J., [Rectosigmoid] (127) 58, [Gastric cancer] (101) 1191, [Liver and its cirrhoses] *1361
Mazet, [Vaccination against typhoid] (44) 1573
Mazza, S,. [Antityphoid vaccination] (74) 894
Mazzini, E., [Pregnancy in uterus didelphys] (116) 1045
Mazzolani, D. A., [Freezing injuries] (84) 1043, [Cholera] (69) 1340
Means, W. H., [Carrell-Dakin solution] (75) 811
Medalia, L. S., [Smear preparations] *914
Meddis, V. N., [Arsphenamin] *1458
Medlar, E. M., [Meningitis] *458
Meeker, W. R., [Angina pectoris] *969
Meige, H., [Jacksonian paresis] (55) 815
Mejia, C. R., [Rabies] (92) *1900*
Melchior, L., [Lymphogranulomatosis in syphilitics] (119) 820
Meleney, F. L., [Blood counts] (15) 955
Melgar, R. F., [Vomiting of pregnancy] (45) 2059
Meltzer, S. J., [Use of epinephrin] *70, [Blood clotting] 1115
Menabuoni, G., [Visceral *syphilis*] (72) 1268
Ménard, [High heels] (10) 272
Mencière, L., [Nontoxic antiseptics] (54) 893, [Treatment of wounds] (52) 1800
Mendel, L. B., [Soy bean] (53) 127
Mendez, A., [Myiasis *of* bladder] (101) 1641
Mendicini, A., [Traumatic pseudotabes] (50) 1126
Merklen, P., [Abnormally low temperature] (44) 198, [Blood pressure in heart disease] (20) 348, [Tuberculosis] (72) 817
Messerli, F., [Heliotherapy and pigmentation] (59) 199
Metcalf, H. E., [Double lumen in fallopian tube] *20
Metcalf, M. M., [Zoology and war] 1003
Métivet, G,. [Wound of subclavian artery] (64) 132
Meulengracht, E., [Hemolytic jaundice] (89) 202
Meunier, L., [Stomach diseases] (66) 61
Meuriot, H., [Spinal anesthesia] (55) 576

Meyer, A. W., [Franklin Paine Mall] *121
Meyer, E. M., [Aerobic spore forming bacillus] (33) 730
Meyer, J., [Trichinosis] *588, [Gastric secretion during fever] (32) 1033
Meyer, K. F., [Albumin-globulin in antitoxic immunity] (74) 193, [Blood proteins] (38) 486
Meyers, A. E., [Starch digestion] (13) 1259
Michel, C., [Monilia vaccine in sprue] (79) 193, (43) 486
Micheli, F., [Vaccine in typhoid] (82) 1341
Mieremet, C. W. G., [Death from electricity] (87) 661
Mignon, M., [Intratracheal injections] (41) 492
Milian, G., [Epinephrin] (59) 1041
Miller, A. H., [Care of eyes during etherization] *83
Miller, C. J., [Radium in uterine hemorrhage] (105) 1636
Miller, D. J. M., [Meningococcus meningitis] (19) 55
Miller, E. M., [Joint formation] (110) 1191
Miller, H. A., [Puerperal infection] 1975
Miller, H. T., [Malposition of appendix] *23
Miller, J. A., [Nontuberculous pulmonary infections] (3) 191
Miller, J. L., [Pneumonia] 564
Miller, J. W., [Neo-arsphenamin] *594
Miller, S. R., [Bence-Jones proteinuria] *137
Miller, T. G., [Dust] *599, [Cigar workers] (1) 955
Millet, J. A. P., [Radium and hematopoietic system] (63) 1979
Mills, C. W., [Tuberculosis and renal function] (12) 125
Minaker, A. J., [Meningococcus carriers] *215
Minerbi, C., [Urine staining technic] (89) 818
Mingazzini, G., [Retrocursive epilepsy] (93) 1509
Mink, O. J., [Meningitis] 563
Minot, A. S., [Nonprotein constituents of edema fluids] (17) 125
Mioni, G., [Wounds of bladder] (33) 2058
Mitchell, O. W. H., [Determination of pneumococcus types] (88) 128
Mixter, W. J., [Fracture of spine] (8) 1890
Mock, H. E., [Rehabilitation] 2012
Mocquot, P., [Wounds of arteries] (69) 133, [Skull wounds] (64) 893
Mohr, O. L., [External factors and sexual cells] (90) 354
Mola, A., [Feeding of infants] (50) 199
Mondelange, J., [Paratyphoid B] (45) 962
Mondolfo, E., [Diphtheria] (86) 1043
Monroe, J. P., [Vocational education] 2013
Monsarrat, K. W., [Wounds of knee] (6) 1263
Monserrat, C., [Monkey's blood in fixation test for syphilis] (122) 129
Montaño, E. F., [Gonorrheal ophthalmia] (58) 351
Montenegro, R., [Emetin and kidney] (117) 1122
Montenovesi, V., [Advanced surgical station] (45) 350
Montgomery, D. W., [Saving of lard] 1026
Montoro, O., [Sprue] (117) 1198
Moore, H. F., [Pneumonia] (26) 1891
Moore, J. A., [Wassermann reaction] 643
Moore, J. J., [Tonsil infections] (73) 886
Moore, M. M., [Enzymatic basis of heart beat] (13) 808
Moore, T. V., [Frönlich's syndrome] *669
Moore, W., [Clothes louse] (70) 886
Moore, W. C., [Cardiac syphilis] (5) 1792
Moorhead, J. J., [Intestinal obstruction] (67) 1036
Morales, D. A., [Recurrence of cancer] (109) 1270
Moreau, L., [Suppurating parotitis in malaria] (48) 198, [Ptosis of liver] (35) 1403
Morelli, E., [Bronchopulmonary disease] (48) 422
Moreno, A. S., [Suprarenal insufficiency] (96) 1197
Moreno, D., [Abdominal surgery] (82) 740
Morgan, J. D., [Diaphragmatic hernia] (25) 130, [Spur-like formations after amputation] (56) 1120
Morgan, O. G., [Infected wounds] (6) 812
Morgan, W. P., [Pneumothorax in tuberculosis] (43) 61, [Acriflavine] (33) 961
Mori, N., [Bacillus murisopticus in rodents] (85) 317
Morinelli, V., [Infarcts in placenta] (80) 202
Morison, A. E., [Magnesium sulphate in wounds] (4) 1335
Morison, R. A., [Mitral stenosis] (7) 1795
Morquiro, L., [Meningitis] (87) 894, [Endocarditis] (83) 1640
Morris, R. T., [Obstructions in pregnancy] (15) 883, [Nuts as food] 1324
Morrison, J. T., [Flavine] (8) 419, [Delayed primary suture] (20) 1504
Morse, J. L., [Diarrheal diseases] (120) 1122
Morton, D. J., [Foot strapping] (72) 1569
Mosenthal, H. O., [Blood sugar in diabetes] (27) 343, [Food value of proteins, fat and alcohol] 1887
Mosher, C. D., [Strength of women] *140
Mosher, G. C., [Abortion] 1889
Mosher, G. W., [Submucous resection] *843
Mosti, R., [Arthrotomy of knee] (44) 275
Mott, F. W., [War psychoneurosis] (14) 1263
Mougeot, A., [Oculocardiac reflex] (49) 658, [Abdominal aortitis] (49) 1573
Mouriquand, G., [Chronic amebiasis] (30) 273, [War bread] (40) 1799, [Malaria] (50) 1800
Moutet, [Radium in cancer of tonsil] (26) 273
Moutier, F., [Pulmonary edema] (52) 1339, [Appendicitis in gassed] (28) 1505
Moyer, J. J., [Tongue-depressor] *680
Moynihan, B., [Gunshot wounds] (123) 58, [Nerve injuries] (124) 58, [Wounds of lungs and pleura] (125) 58
Mueller, T., [Radium and hematopoietic system] (63) 1979
Muhlberg, W., [Cooperation of physicians and insurance companies] 261
Muniagurria, C., [Cerebellar symptoms] (93) 425
Munk, J., [Osteo-arthropathy] (105) 1342
Muns, W. E., [Determination of pneumococcus types] (88) 128
Munson, J. F., [Pituitary gland in epileptics] (17) 1398
Murakami, J., [Vegetative nervous system in typhoid] (35) 1033
Murard, J., [Trephining] (43) 575, [Transfusion] (70) 1897
Murata, M., [Vomiting as cause of hemorrhagic erosion] (11) 348
Muratet, L., [Typhus] (58) 963
Murray, L. M., [Diaphragmatic hernia] (25) 130
Muto, K., ["Asetake"] (51) 1261
Myers, V. C., [Blood in urology] (58) 1189
Mygind, S. H., [Internal ear disease] (100) 662

N

Naamé, [Epinephrin in cholera] (57) 132
Naegeli, O., [Social insurance] (75) 1042, [Neuroses] (78) 1196
Nageotte-Wilbouchewitch, M., [Deformity from attempts at abortion] (61) 577, [Stiff joints] (44) 1983
Nario, C., [Gastric fistula] (80) 1268
Navarro, A., [Liver diseases] (77) 1268
Neff, J. M., [Military surgery] (141) 195
Negrete, J., [Antivenom serum] (96) 819
Negroni, P., [Cholera] (78) 1043
Neill, A. J., [Catalase in shock] (17) 808, [Anesthetics] (11) 1332, [Increasing oxidation] (18) 1332, [Oxidation in body] (18) 1978
Nemser, R., [Viscosity of lymph] (4) 124
Netter, A., [Meningococcus septicemia] (46) 198, [Meningitis] (29) 656, [Typhus] (37) 891, [Meningococci] (47) 1040, (29) 1982
Neuhof, H., [Fascia transplantation] (121) 959
Neuhof, S., [Cardiosclerosis] *1140
Neves, A., [Hexamethylenamin in bronchitis] (31) 814
New, G. B., [Harelip and cleft palate] (70) 483, [Celluloid] *988, [Trauma and laryngeal nerves] (25) 1119
Nicholson, S. T., [Salvarsanized mercurialized serum] (122) 888
Nicolaysen, L., [Acute bulbar paralysis] (115) 1804
Nifong, F. G., [Hodgen splint] 1889
Nikolsky, D. P., [Public kitchens] (105) 741, [War prisoners] 1542
Nin Posadas, J., [Venereal granuloma] (82) 1406
Nixon, C. E., [Industrial poison] *2004
Nixon, J. A., [Surgery of chest] (3) 734
Nobécourt, P., [Short diphtheria bacilli] (40) 198, [Streptococcus septicemia] (17) 272
Noble, R. E., [Disabled soldiers] 1926
Noble, W. C., [Precipitin antigen from bacteria] (44) 731
Noehren, A. H., [Pressure on larynx] *680
Nogier, L., [Radium in gynecology] (61) 1507
Noguchi, H., [Vaccine virus] (72) 1036, [Serum diagnosis of syphilis] *1157, 1252, 1487, [Leptospira icterohemorrhagiae] (67, 68) 1794
Noguès, P., [Wounds of kidneys] (55) 1506
Nordentoft, J., [Pseudoleukemia] (110) 1344, (105) 1510
Nordentoft, S., [X-ray in brain tumors] (109) 1510
Nordlund, H., [Simulation of deafness] (121) 968
Nordmann, J., [Colon hemorrhage] (28) 736
Norris, C., [Banti's disease] (10) 191, [Wassermann reaction] 1970
Norris, C. C., [Tuberculosis] *362
Norris, G. W., [Aneurysm of aortic arch] (26) 416, [Trench foot] *455, (11) 1796
Norrlin, L., [Appendicectomy] (104) 498
Notari, L., [Otitis with pleural empyema] (76) 578
Novaes, E., [Trypanosomiasis and thyroid] (78) 1986
Novikoff, V. N., [Wounds of skull] (67) 277
Novy, F. G., [Anaphylatoxin and anaphylaxis] (79) 1509
Nuñez, P. E., [Paralysis with mitral disease] (83) 894
Nuzum, F. R., [Angina pectoris] *67, [Infarction of entire spleen] *282
Nuzum, J. W., [Antipoliomyelitic serum] (79) 957
Nyfeldt, A., [Silver staining of bacteria] (99) 662

O

Ochoterena, I., [Histology of cornu ammonis] (83) 134
Odell, H. E., [Medical Officer of Navy] 563
Oden, R., [Swedish movements] *828
d'Oelsnitz, M., [Contracture of hands] (53) 576, (27) 890, [Microsphygmia with contracture] (60) 815, [Contracture] (28) 1337, (28) 1402
Oertel, H., [Bile resorption in jaundice] (26) 343
Ohnell, H., [Gastric ulcer] (127) 136
Okinczyc, J., [Multiple wounds] (35) 1572
Okuda, K., [Spirochaeta icterohemorrhagiae after serum treatment] (81) 652
Oldenborg, H. A., [Reconstruction and medical profession] 1881
Olitsky, P. K., [Meningococci] *153
Olivarius, W., [Safety match box dermatitis] (111) 1510
Oliver, T., [Nephritis] (3) 959
Olmstead, M., [Postoperative pneumonia] 1496
O'Malley, J. G., [Military surgery] (141) 195
Opie, E. L., [Elephantiasis] *987, [Trench fever] *1597, 1888
Opitz, R. B., [Viscosity of lymph] (4) 124
Oppenheimer, B. S., [Irritable heart] *1919
Ordoñez, E. S., [Skull fractures] (86) 1197
Orfila, J. P., [Venereal diseases and matrimony] (84) 661
Orr, T. G., [Myositis ossificans traumatica] 1889
Ortali, O., [Operation on superior longitudinal sinus] (55) 659
Osborne, T. B., [Soy bean] (52) 127, [Proteins of cow's milk] (58) 417
Osgood, R. B., [Orthopedic centers of Great Britain] (34) 884
Osnato, M., [Personality in paresis] *434, [Paralysis and dystrophy] (17) 486, [Morphin poisoning] *1815
Osterberg, E., [Sugar in urine] (43) 1567
Otis, E. O., [Tuberculosis in soldiers] (22) 268
de Oyarzabal, D. E., [Skin and internal pathology] (82) 1575

P

Pacini, A. J. P., [Typhoid bacilli cultures] (34) 1567
Pages, F., [Parovarian cyst] (102) 1198, [Gastric ulcer] (93) 1576, [Duodenal alimentation] (104) 1641
Pagnioz, P., [Spirochete jaundice] (38) 891, (35) 1265
Pahud, C., [Medical inspection] (67) 1508
Paisseau, G., [Malaria] (29) 1337
Palmegiani, E. V., [Infant welfare work] (82) 64
Palmer, D. W., [Safety pin in stomach] 480, [Duodenal fistula] *595
Palmer, H. G., [Lead and birth rate] 779
Palmer, W. W., [Colorimetric determination of hemoglobin] (67) 417
Panayotabon, G., [Pneumococcus meningitis] (45) 198
Pappenheimer, A. M., [Trench fever] *1597
Paraf, [Heart in scarlet fever] (46) 1506, [Meningitis] (22) 2057
Paramelle, M., [Amputation of foot] (22) 1402
Pari, G. A., [Gooseflesh streak] (65) 1340, [Staphylococcus albus] (59) 1984
Parisot, J., [Trench foot] (27) 2057
Park, E. A., [Blood serum as vasoconstrictor] (21) 1891
Park, F. A., [Edema and parotid enlargement] (3) 1637
Park, F. S., [War edema] *1826
Park, W. H., [Milk] 720, [Pneumonia] 1497, [Diphtheria] 1886
Parker, C. A., [Fracture of femur] *84
Parker, J. T., [Injections of hemolytic streptococci] (46) 268
Parker, L. F., [Myrtol and eucalyptol poisoning] 1887
Parodi, A. A., [Echinococcus cysts] (56) 351
Parodi, S., [Amebiasis] (78) 424, [Tapeworm] (66) 1128
Parsons, R. P., [Flying ability] *1064, [Bárány chair test] 1879
Parturier, M., [Uremia] (49) 1010, [Rheumatism and heart disease] (47) 1800
Pasquier, C., [Urticaria with malaria] (27) 273
Pasteau, O., [Genito-urinary-dermatologic centers] (40) 131, [Urethral stricture] (54) 1506
Pasteur, W., [Pyrexia] (21) 656
Patel, M., [Surgical sector of seventh region] (33) 131, [Projectiles in neck and head] (79) 1899
Patterson, H. A., [Agglutination] *1754
Pauchet, V., [Gastropylorectomy] (39) 492, [Wounds of hip] (51) 493, [Suture after prostatectomy] (48) 658, [Resection of colon] (22) 814, [Gastroptosis] (67) 1574
Paucot, R., [Urine findings] (11) 737
Paul, C. N., [Ringworm] (9) 348
Paulson, A. E., [Mental defectives] (55) 732
Payne, M. J., [Inguinal hernia] (130) 1122
Payne, R. L., Jr., [Decompression for head injuries] 266
Peacock, A. D., [Trench fever] *1597

Pearce, R. M., [Iron elimination] (34) 1260
Pearson, W., [Flavine] (14) 1123
Pedersen, M. B., [Falling of hair and syphilis] (130) 1643
Pedrini, L., [Cancer fever] (59) 423
Peebles, A. R., [Colorimeter] *679
Péhu, M., [Albuminuria after acute nephritis] (34) 815, [Dyspepsia] (27) 1337
Pellegrini, A., [Cinematic plastics] (39) 350
Pelouze, P. S., [Diphtheroids and sterility] *977
Pelz, M. D., [Allergic phenomena and death] (52) 1568
Pende, N., [Malaria] (65) 201
Penichet, J. M., [Trachoma] (75) 1986
Pennington, J. R., [Anoscope] *154
Penso, E., [Eczema] (119) 967
Peradotto, V., [Uremic meningitis] (88) 895
Pereira, L. L., [Infected wounds] (99) 1197
Perez, A. M., [Paraplegia from rupture of ligament] (100) 966
Perkins, R. G., [Roumania] *743
Permin, C., [Hypertonic treatment of ulcers] (91) 1987
Perrin, [Toxicity of urine] (13) 348
Perrochon, [Tuberculosis] (24) 1798
Perry, H. M., [Agglutination in diagnosis] (35) 1895
Perry, H. P., [Flatfoot] (67) 187
Peter, G. H. J., [Anal fistula] (122) 1271
Peters, B. A., [Acidosis in diphtheria] (7) 490
Peters, J. P., Jr., [War nephritis] *1760
Petersen, W. F., [Lipovaccines] *427
Petit, A., [Anachlorhydria] (41) 198, [Gastric juice] (18) 272, [Gastritis in gassed] (44) 962, [The sympathetic syndrome] (27) 1124, [Bradysphygmia] (50) 1573, [Dyspepsia of prisoners] (33) 1798
Petit, A. J., [Hyperpepsia and hyperchloridemia] (87) 740
Petrovich, [Tuberculosis] (11) 272
Pettersson, F., [Tubercle bacilli in sputum] (116) 136
Pettibone, D. F., [Blood coagulation] (72) 886
Pettit, A., [Antispirochete serotherapy] (40) 962
Pettit, R. T., [War experiences] 1308
Peutz, J. L. A., [Fat in urine] (123) 1642
Pezzi, C., [Iodin urine reaction] (80) 965
Pfulb, [Film dressings for burns] (37) 575
Phemister, D. B., [Joint *formation*] (110) 1191, [Phosphorus] *1737
Phifer, F. M., [Renal infections] *1444
Phocas, A., [Oxaluria and diazo reaction] (86) 1129
Pianese, G., [Retrogression in cancer] (77) 660
Picard, R., [Slow endocarditis] (44) 891
Pighini, G., [Traumatic-emotional dystrophy] (51) 1126
Pike, F. H., [Bárány chair tests] 1559
Pilcher, E. M., [Flavine] (8) 889
Pinard, A., [Declining birth rate] (52) 61
Pincherle, M., [Familial spasmophilia] (66) 1985
Pinilla, R., [Sweat-shop evils] (88) 1197
Pisani, S., [Big abdomens in soldiers] (73) 201
Pitres, A., [Paralysis after wounds] (23) 273
Pittaluga, G., [Vitamins] (62) 1128
Pittarelli, E., [Tests for aldehyd] (41) 350
Pitz, W., [Scurvy] (48) 1188
Plantier, L. [Epilepsy] (59) 1800
Plascencia, L., [Hematologic index] (111) 1045
Platero, H. F., [Myoma on gravid uterus] (84) 894, [Dystocia and pituitary extract] (86) 894
Platon, O., [Spinal anesthesia] (55) 576
Platou, E., [Bone cysts and sarcomas] (76) 278, (32) 1119
Platt, H., [Injuries of mandible] (8) 1400
Pletnew, D., [Extrasystolic arrhythmia] (28) 197
Plisson, [Flora of wounds] (28) 1124
Pol, D. J. H., [Deficiency diseases] (85) 202
Pol, G. G. J. H., [Illumination for fine work] (110) 66
Polak, J. O., [Blood pressure in postoperative shock] (119) 959, [Conserved ovary] 1975
Policard, A., [Grafting operations] (52) 575, [Chest wounds] (62) 1194, [Periosteum and bone formation] (49) 1639
Pollidori, A., [Familial spasmophilia] (66) 1985
Pollock, L. J., [Lenticular degeneration] (84) 118
Pont, M., [Restoration of nose] (28) 273
Porot, A., [Malaria] (37) 1799
Porter, L., [Appendicitis] (18) 345
Potsdamer, J. B., [Lavatory chamber] 1562
Potter, C., [Goiter operations] (84) 57
Potter, N. B., [Streptococcus oral sepsis] (56) 187
Poucher, J. W., [Preeclamptic cesarean section] (6) 342
Poulard, A., [Syphilis of eye] (68) 61, [Scars on face] (76) 1898
Powell, C., [Cardiac and renal disease] (103) 1894
Poynton, F. J., [Cardiac infection] (4) 1123, (9) 1570
Pradere, R., [Syphilitic meningitis] (65) 1128
Pratt, J. H., [Bed rest in tuberculosis] (13) 416
Presno, J. A., [Repeated cesarean section] (71) 353, [Pyelotomy] (100) 1198
Price, F. W., [Cardiac pathology] (13) 1100
Priestley, J., [Mental deficiency and Binet-Simon tests] (2) 655
Prince, A. L., [Breathing and circulation] (39) 1892
Prince, E. M., [Anatomic defects in newborn] *1212
Prins, G. A., [Urticaria from exertion] (57) 2059
Pron, L., [Palpation of cecum] (41) 1039, [Palpation of stomach] (68) 1195
Pruvest, P., [Wounds of chest] (24) 890
Pryer, R. W., [Scarlet fever] (71) 886
Pulford, D. S., [Experimental hydronephrosis] (16) 125
Purdy, J. S., [Mutton bird oil] (11) 889
Putti, V., [Artificial limbs] (40) 1126, (57) 1984
Pybus, F. C., [Renal calculus] (13) 812

Q

Quarelli, G., [Meningitis] (78) 495, [Vaccine in typhoid] (82) 1341
Queirel, J., [Hemoglobinuria plus Raynaud's disease] (78) 1406
Quénu, E., [Wounds of foot and ankle] (74) 133, [High heels] (10) 272, [Shock] (57) 963
de Quervain, F., [Goiter] (37) 274
Quigley, W. J., [Chorea] (72) 957

R

Rabello, E., [Syphilis] (97) 966
Rackemann, F. M., [Circulating antibodies and serum disease] (66) 1036, [Asthma] (22) 2054
Rahe, J. M., [Organ extracts and muscle] (15) 343
Raices, J. A., [Syphilis] (76) 1129
Railliet, G., [Detection of syphilis by mouth] (61) 132, [Whooping-cough] (51) 199, [Fifth cusp] (58) 815, [Scabies] (42) 815, [Leukoplasia] (60) 1194
Raimondi, R., [Congestion of liver] (67) 133, [Glycuronuria] (66) 1507
Raiziss, G. W., [Absorption of mercury] *142
Ramond, F., [Anachlorhydria] (41) 198, [Suprarenal insufficiency] (42) 198, [Gastric juice] (18) 272, [Tuberculous meningitis] (19) 348, [Addison's disease plus goiter] (56) 815, [Subdulness at apex] (57) 815, [Gastritis in gassed] (44) 962, [The sympathetic syndrome] (27) 1124, [Bradysphygmia] (50) 1573, [Dyspepsia of prisoners] (33) 1798
Ramond, L., [Gonococcus count] (47) 815, [Flora of wounds] (28) 1124, [Streptococci in wounds] (43) 1639
Rand, C. W., [Amaurotic family idiocy] (34) 55
Ransohoff, J., [Injuries of spine] 341
Rappeye, W. C., [Kidney function in senility] (51) 652
Rasch, C., [Dermatitis] (114) 1341
Ravaut, P., [Transfusion in anemia] (39) 891, [Diphtheria in gassed] (40) 891
Ravenna, F., [Granular red corpuscles] (82) 1802
Raventos, R., [Lumbar puncture] (95) 818
Rawls, R. M., [Cystocele] (2) 1118
Raymond, V., [Trench foot] (27) 2057
Rayner, H. H., [Foreign body in brain] (2) 1038
Reasoner, M. A., [Papaverin in syphilis] (58) 269
Réchou, G., [Length of exposure] (41) 1338
Rédard, P., [Bending of spine as war traumatism] (37) 350
Reder, F., [Cavernous and plexiform angioma] 1889
Reed, C. A. L., [Colectomy] *1584
Rees, M. H., [Pituitary extract and urine] (16) 1332
Rees, W. A., [Wounds of chest] (23) 491
Regan, J. G., [Skin and throat in poliomyelitis] (34) 314, [Hydrocephalus of poliomyelitis] (2) 1398
Reichard, V. M., [Perspiring and *frozen feet*] 233
Reid, M. R., [Ureterovenous anas*tomosis*] (47) 1035
Reilly, J., [Cholalemia in jaundice] (42) 962
Reinbold, P., [Physiologic segmen*tation of patella*] (58) 199
Reis, A., [Physical measurements and tuberculin reaction] (28) 814
Remlinger, P., [Rabies virus] (19) 1123
Renault, A., [Gonorrhea] (30) 349
Renault, J., [Cervical rib simulating Pott's disease] (32) 890, *[Laryngovestibulitis]* (40) 737
Rendu, R., ["Mustard" gas] (62) 1507
Réniac, [Diphtheria in gassed] (40) 891
Retinger, J. M., [Serum diagnosis *of syphilis*] 1561
Reveillot, [Quinin in urine] (52) 1573
Revel, [Secondary hemorrhage] (49) 493
de Rezende, C., [Sporotrichosis] (67) 1405, [Leishmaniosis] (90) 1802
Rhamy, B. W., [Syphilis] 1969, [Preservation of complement] *2000
Rhea, L. J., [Streptococci] (58) 1120
Ribadeau-Dumas, L., [Transfusion in measles] (23) 1798, [Tuberculosis] (24) 1798
Ribeiro, H., [Adams-Stokes syndrome] (90) 1197
Ribon, V., [Ascarides] (92) 135
Riccioli, E., [Wounds of skull] (49) 1404
Richards, G. G., [Gastric and duodenal ulcers] (105) 57
Richards, J. H., [Diabetes mellitus] (91) 1894
Richardson, C. W., [Reconstruction] 1930
Richardson, E. H., [Hysterectomy and ovarian function] 1885
Richardson, G., [Septicemia in wounds] (3) 812
Richardson, H. B., [Blood serum as vasoconstrictor] (21) 1891
Richet, C., [Declining birth rate] (52) 61
Richter, I. M., [Auto-agglutination] (24) 1333
Ricketts, B. M., [Anastomosis for intestinal obstruction] 264
Ricklin, B., [Tardy rachitis] (62) 200
Ridlon, J., [Soldier's foot] 806
Riely, C., [Poliomyelitis] (12) 1633
Ries, E., [Septic abortion] (109) 1191, [Uterine prolapse] (13) 1792
Rietti, F., [Leukemia and tuberculosis] (75) 201
Rieux, [Transfusion of citrated blood] (45) 1639
Riggs, T. F., [Epithelioma involving axilla] 342
Rincones, G., [Leishmaniosis] (81) 579
Riosalido, [Pain in foot] (92) 1342
Risley, E. H., [Radium in cervix cancer] (54) 193
Rist, E., [Contagious disease in army] (1) 415, [Address] 1854, 1935
Robert, A. E., [Film dressing] (63) 1194
Roberts, F., [Stitch for closing skin wounds] *157
Roberts, L. W., [Duodenal ulcer] (38) 1193
Roberts, M., [Thirst at sea] 1291
Roberts, P. W., [Syphilitic joint disease] *372
Robertson, A. R., [Nephritis] (64) 1121
Robertson, D. E., [Bone repair] *1134
Robertson, H. E., [Influenza] *1533
Robertson, L. B., [Transfusion] (5) 59, (4) 568
Robertson, O. H., [Autohemagglutination] (64) 1794
Robertson, T. B., [Acceleration of growth of carcinomas] (42) 730
Robin, A., [Laryngovestibulitis] (40) 737
Robins, C. R., [Pathologic uterus at menopause] (12) 1033
Robinson, E. F., [Stricture of esophagus] (105) 346
Robinson, G. C., [Heart-block] (32) 343, (36) 650, [Digitalis] (49) 732
Robinson, G. H., [Meningococci] 1329
Robinson, J. M., [Wood alcohol blindness] *148
Robson, A. W. M., [Paraplegia] (9) 419, [Wound treatment] (1) 490
da Rocha, N., [Massage of lacrimal sac] (85) 1269
Rochaix, [Autovaccine in cerebral abscess] (49) 131
Roche, M., [Prophylaxis of malaria] (27) 60
Rocher, H. L., [Chronic osteomyelitis] (33) 656
Rochet, V., [Repair of urethra] (69) 1897
Rodriguez, F., [Vascular disease] (106) 1198
Rodway, B. J., [Injuries of mandible] (8) 1400
Roffo, A. H., [Cultivation of sarcoma cells] (92) 818, [Miostagmin reaction with cancer] (99) 819, [Venereal granuloma] (82) 1406
Roger, H., [Suprarenal functioning] (55) 199, [Nervous shock] (38) 1403, [Spinal fluid in paralysis] (25) 1798, [Arsenic poisoning] (32) 1798, [Skull plastics] (34) 1982
Rogers, J., [Organ extracts and voluntary muscle] (15) 343
Rogers, L., [Leprosy] (10) 1192
Rogoff, J. M., [Effect of phrenic sympathetic union on thyroid] (15) 808
Rohdenburg, G. L., [Heterologous tumor grafts] (39) 730, [Radium and tumors] (64) 1979, [Tumors] (65) 1979
Rolland, [Test for occult blood] (43) 656
Rolleston, H. D., [Serum disease] (17) 130
Romaña, L., [Pituitary body and polyuria] (96) 966
Romer, F., [Joint wounds] (18) 1337
Romme, M., [Cervical rib simulating Pott's disease] (32) 890, [Obstruction of duodenum] (52) 892
Roncheso, A. D., [Wassermann test] (59) 577
Roncoroni, L., [Synkinesia] (38) 275
Rondopoulo, P. J., [Tuberculosis] (121) 1199
Rongy, A. J., [Ectopic gestation] (11) 342
Rønne, H., [Anamnesis with eye disease] (90) 1987
Roquebert, D., [Epinephrin test *of* heart] (75) 1195
de Rosas, N. G., [Extra-uterine pregnancy] (104) 1198
Rosebery, S., [Chlorin water in infantile diarrhea] (6) 196
Rosenbloom, J., [Purins in gout] *285, [Diabetes insipidus] *1292, [Blood pressure in gout] *2000
Rosenow, E. C., [Lobar pneumonia] *759, [Poliomyelitis] (39-42) 1260
Rosenthal, G., [Bacteriologic findings during operations] (39) 1799
Rosenwald, L., [Prostatic enucleation] 1889
Ross, E. L., [Blood dextrose and anesthesia] (49) 1978
Ross, T. W., [Neodiarsenol] *155
Rossi, F. G., [Gastric ulcer] (78) 740

Roth, D. A., [Pseudoleukemia infantum] *1914
Roth, I. R., [Empyema drainage] *1455
Rothschild, M. A., [Irritable heart] *1919
Roucayrol, E., [Endo-urethral diathermy] (36) 421
Rouhier, G., [Grafts for skull defects] (62) 577
Rous, P., [Blood substitutes] *219, [Autohemagglutination] (64) 1794, [Hemosiderin granules in cells of urine] 1887
Roussy, G., [Contracture] (27) 890, (28) 1337
Routh, A. J., [Antenatal syphilis] (20) 491, (3) 572
Roux, C., [Goiter] (37) 274
Roux, E., [Gas gangrene] (49) 962
Roux, S., [Sacral meningocele] (66) 964
Roux-Berger, J. L., [Chest wounds] (62) 1194
Row, R., [Rat-bite fever] (15) 1192
Rowe, L. W., [Intravenous use of mercuric iodid] (55) 1568
Ruata, A. Q., [Cold and microorganisms] (37) 1125
Rubin, G., [Raynaud's disease] (130) 654
Rudis-Jicinsky, J., [Swoboda's Conscious Evolution] 872
Ruediger, E. H., [Typhoid and pyonephrosis] *367
Ruggi, G., [Lesions of radial nerve] (35) 350
Rumpelmayer, [Local treatment of gassed] (55) 61
Runnels, S. C., [Antipneumococcic serum] (75) 1189
Rusca, P., [Tuberculosis] (75) 1801
Russell, D. W., [Typhoid bacilli cultures] (34) 1567
Ryan, L. M., [Tuberculin test] *982
Rydor, C. T., [Transplantation of tuberculous lymph nodes] (35) 884
Ryle, J. A., [Trench nephritis] *998, (22) 1264

S

Sachs, B., [Arsphenamin in syphilis] 1790
Sacquépée, E., [Gas gangrene] (47) 1983
St. Clair, C. T., [Perspiring and frozen feet] 233
St. George, A. V., [Wood alcohol] *145
St. John, W., [Leukemia] (128) 269
Sakai, W., [Ginseng] (10) 348
Salaberry, M. R., [Eclampsia] (109) 1198
Salanier, M., [Meningitis] (29) 656
Salant, W., [Diet and toxicity of sodium tartrato] (88) 887, [Tartrates, citrates and oxalates] (50) 1261, [Glycosuria from zinc salts] (60) 1978
Salinari, S., [Wounds of skull] (46) 276
Salom, C. E., [Amebiasis] (84) 496
Salomon, A. V., [Meningococcus] *684
Salomonson, J. K. A. W., [Cerebral atrophy of muscles] (92) 895
Saloz, C., [Glycosuria during intercurrent disease] (27) 736, [Pressure of spinal fluid] (42) 1403
de Salterain, J., [Intra-ocular sarcoma] (69) 1129
Salvanoschi, E., [Jaundice] (70) 1267
Salvesen, H., [Miostagmin reaction] (127) 1272
Salzer, M., [Tin poisoning] *980
Samaja, N., [Hemorrhagic purpura] (64) 1267
Sampaio, O., [Epinephrin content of suprarenals] (44) 2058
Sampson, H. L., [Tuberculosis] (37) 884
Sampson, J. A., [Foreign material from uterine cavity in uterine veins] 1885
San Martin, H. G., [Cesarean section for eclampsia] (86) 661
San Martin, R. G., [Diabetes] (89) 966, [Oxygen in gastric diseases] (94) 1576
Sand, R., [Address] 1936
Sanders, E. M., [Osteomyelitis] 1331
Sanders, R. L., [Gastric ulcers] 1330
Saner, F. D., [Infected wounds] (6) 812
Saneyoshi, S., [Viscosity of blood in anemia] (59) 277
Sanfelice, F., [Tuberculosis and blastomycosis] (61) 1267
Sanford, A. H., [Isohemagglutination groups] *1221, [Urobilin and urobilinogen] (8) 1498
Sansum, W. D., [Mercuric chlorid poisoning] *824, [Forced diuresis] *904
de Santa Maria, S., [Gastric pain] (90) 741
Santesson, C. G., [Arrow poison from Brazil] (118) 136
Sanz, E. F., [Syphilis] (91) 497
Sappington, C. O., [Anemia] (28) 1891
Sargont, C. S., [Blood and urine in muscular dystrophy] (41) 650
Sargent, J. C., [Toxicity of salvarsan] *908, [Unfavorable salvarsan reports] 1628
Sarkissiantz, A., [Return of goiter] (75) 63
Sarraca, R. del V., [Diabetic foods] (91) 818
Satre, A., [Suprarenal insufficiency] (56) 1194, [Internal and external temperature] (24) 1402
Sauer, L. W., [Loss of water vapor through skin] (37) 1034
Sauvage, [Genito-urinary psychonouroses] (62) 1340
Savignac, [Dysentery] (29) 736
Sawyer, C. E., [State boards in present war] 648
Sawyer, M., [Acidosis in children] (1) 267
Sawyer, W. A., [Correctable defects] *308
Scalapino, W., [Music and cardiovascular system] (12) 1566
Scalone, I., [Malignant edema without gas] (42) 275
Schamberg, J. F., [Absorption of morcury] *142
Schapira, S. W., [Tuberculosis of kidney] *591
Schauffler, R. McE., [Painful feet] 1889
Scheel, V., [Orthostatic albuminuria] (112) 1510
Schellekens, W. M. J., [Tetanus] (84) 353
Scheltema, M. W., [Hydrochloric acid in gastric juice] (111) 135
Schiller, H., [Ulceration of vulva] (7) 1118
Schiøtz, C., [Sarcoma] (131) 1200
Schippers, J. C., [Familial splenomegaly] (1) 1398
Schlapp, M. G., [Mental defoctives] (55) 732
Schlesinger, E. G., [Infected wounds] (6) 812
Schlittler, E., [Deafness] (75) 1042
Schloss, O. M., [Urine tube] *223, [Intestinal intoxication] (8) 1032
Schmiegelow, E., [Bronchial tuberculosis] (125) 1199
Schöbl, O., [Action of chemicals on cholora vibrio] (120) 129, [Fixation test for syphilis] (122) 129
Scholz, T., [Calcification of pineal gland] (24) 343
Schönberg, S., [Tuberculosis and kidney and liver disease] (70) 495
Schulman, M., [Detecting heart lesions] 1489
Schut, J., [Acclimatization] (120) 1271, [Tuberculosis] (112) 1804
Schuyler, W. J., [Indicanuria] (94) 489
Schwab, R., [Pyelonephritis] (54) 494
Schwab, S. I., [Lymph in nerves] (84) 886
Schwartz, A., [Skull wounds] [64) 893
Schwartz, A. B., [Bacteriology of urine] (31) 809
Scott, A. J., Jr., [Pyloric stenosis] *1913
Scott, J. N., [Radium in cancer] 1255
Scott, J. R., [Tuberculosis of appendix] (45) 192
Seaman, L. L., [Increased rank of medical officers] 1252
Secher, K., [Congenital neuroblastoma] (73) 278
Sedgwick, J. P., [Creatinuria] 720
Seelig, M. G., [Reconstruction and rehabilitation] 1926
Seelman, J. J., [Serum diagnosis of syphilis] 1486, 1879
Segar, L. H., [Flying ability] *1064, [Bárány chair tests] 1879
Segura, E. V., [Tumors of pituary body] (100) 1044
Seiglie, H., [Poisoning from fish] (100) 1269
Sekiguchi, S., [Arthritis in swine] (69) 127, [Transfer of antibodies to spinal fluid] 1498
Selhorst, J. F., [Osteomalacia] (116) 967
Sencert, [Stenosis of esophagus] (21) 1402
Senlecq, L., [Fracture of humerus] (62) 893
Seros, M., [Prostatism] (73) 1405
Sergent, E., [Tuberculosis] (49) 738, [Chest wounds] (24) 890
Serra, A., [Fractures] (41) 1126
Sever, J. W., [Diagnosis of back lesions] (29) 126
Sgobbo, F. P., [Roentgen rays and callus] (86) 1900
Shaffner, P. F., [Chancre of eyelid] *676
Shapiro, L., [Banti's disease] (10) 191
Sharpe, W., [Facial paralysis] *1354
Shattuck, F. C., [Pneumonia] (37) 809
Shaw, H. L. K., [Whooping-cough] (93) 489
Shaw, J. M., [Classes in nursing] 49
Sheehan, D. T., [Nationality of Graves] 720
Shepardson, F. W., [Medical licensure] *763
Shepherd, W. M., [Excision of elbow-joint] (13) 959
Sherman, H. C., [Corn as human food] *1579
Sherwin, C. F., [Hodgen splint] 1889
Shevky, A. E., [Renal activity] (8, 10) 1566, (12) 1977, (13) 1978
Shier, R. V. B., [Ruptured ectopic pregnancy] (43) 1793
Shiga, K., [Serovaccine for tuberculosis] (78) 353
Shoup, J., [Unusual gallbladder complication] (14) 55
Sicard, J. A., [Alcohol in neuralgia] (64) 61, [Compression of norve trunks] (51) 738, [Neuritis] (20) 889, [Spinal fluid in paralysis] (25) 1798, [Arsenic poisoning] (32) 1798, [Skull plastics] (34) 1982
Siccardi, P. D., [Hemorrhagic icterus] (59) 739
Siebenmann, F., [Deafmutism] (57) 739
Sieber, P. R., [Blood pressure in head traumas] (7) 568
Sieur, [Army Medical Department] (29) 1265
Sigerist, H. E., [Camphor and heart] (52) 658
Signorelli, A., [Pulmonary tuberculosis] (74) 495
Silberschmidt, W., [Bacteria carriers] (81) 1196
Silliman, G. S., [British cordiality] 1184
Silvestrini, D., [Infected wounds] (66) 201
Simici, D., [Blood pressure in typhus] (36) 961
Simmonds, N., [Pellagra producing diets] (58) 956
Simmons, C. C., [Hodgkin's disease] (24) 55
Simon, C., [Potassium iodid intravenously] (51) 815
Simon, C. E., [Amino-aciduria and Bence-Jones proteinuria] *224
Simon, M., [Ascites with cirrhosis] (96) 662
Simoniai, R., [Depression in thorax] (72) 201
Simpson, J. A., [Fractures] (37) 1334
Sindoni, M., [Meningitis] (60) 1985
Singer, H. D., [Psychoses with diabetes] (85) 418
Singer, J. J., [Lupus erythematosus discoides and tuberculosis] (4) 1498
Siredey, A., [Cancer of esophagus] (35) 1982
Sisto, P., [Nephritis with spirochetes in urine] (87) 64
Sivori, L., [Toxin extracted from tubercle bacilli] (86) 740
Sjogren, T., [German plan for war cripples] 379
Skelton, R. F., [Antiscorbutic value of milk] (13) 490
Slade, C. B., [Functions of municipal sanatorium] 188
Slemons, J. M., [Blood in eclampsia] (18) 1792
Sluyters, A., [Atropin and physostigmin] (111) 66
Small, J. C., [Bacterial antigens] 1497
Smillie, W. G., [Poliomyelitis] (65) 1036
Smith, C. E., Jr., [Scarlet fever] 258
Smith, C. H., [Undernourished children] (1) 2053
Smith, G. H., [Intracutaneous a sorption] (47) 731
Smith, G. M., [Fat in appendi (26) 956
Smith, L. H., [Trinitrotoluen *231
Smith, M., [Malaria] (123) 1122
Smith, S. C., [Cardiovascular e aminations] *911
Smith, S. M. [Pericardial knoc (11) 572
Smyth, H. F., [Dust] *599
Sobel, J., [Expectant mothers] (12 347
Soderstrom, G. F., [Breakfast a heat production] (23) 1891
Sodré, A. A. de A., [Tuberculos of spleen] (92) 64
Soesman, F. J., [Exercise in psych neuroses] (96) 425
Solari, E. F., [Mycetoma] (10 967
Soler, F. L., [Fistulas in digest tract] (88) 424
Sollmann, T., [Local anesthetic *216, (52) 1261, [Acciden from anesthetics] 258, [Ane thetics] (85-87) 887, [Musta oil] (42) 1892
Solovtsova, A. S., [Ferments in i fectious diseases] (104) 1576
Sonne, C., [Hydrogen ion conte of blood] (90) 661
Sordelli, A., [Production of ant toxin] (77) 1406
Sorensen, S. T., [Meningococcus i fection] (93) 1987
Soresi, A. L., [Needle for suturin with wire] (75) 133, [Pas'eu ization of wounds] (74) 1508
Souques, A., [Blood pressure paralyzed children] (18) 31 [Lost tendon reflexes] (26) 12
South, F. L., [Intestinal obstru tion] (46) 651
Southard, E. E., [Mental disease (61) 811
Souttar, H. S., [Nerve injuries] (419
Sowder, C. R., [Gallbladder di eases] (43) 268
Spaeth, R. A., [Pituitary extract (40) 1892
Speed, K., [Dislocation of cervica vertebrae] (44) 192, [Gas in fections] *225, [Knee wounds *918, [Cranial wounds] (10 1191
Spencer, H. J., [Hemorrhoids] *22
Spick, A., [Liver abscess] (25) 133
Spiegelberg, S. L., [Tuberculosis o kidney] *591
Spriggs, E. I., [Sulphemoglobinemia] (21) 1264
Spruit, C. B., [Pneumonias] *106
Squier, J. B., [Blood in urology] (58) 1189
Squirru, C. M., [Mixed inguinal hernia] (88) 134, [Inguinal hernia] (64) 352
Srinivasamurti, G., [Palmyra fibor] (29) 1193
Stanley, L. L., [Sprayer for paraffin] 1489
Stearns, A. W., [Psychiatric examination] *229
Stebbins, N. I., [Small hospital in rural places] 1889
Steensland, H. S., [Action of benzol] (79) 127
de Stefano, S., [Palpable lymphatics] (46) 1126
von Steiger, B., [Lactation and mammary cancer] (47) 1404
Stein, O. J., [Nasal splint] *224
Steindler, A., [Tendon transplantation] (30) 884
Steinfield, E., [Pneumonia] *14, (75) 957, [Pneumonic lungs] (36) 1635, [Pneumococcus infection] (38) 1634
Steinhardt, L. A., [Medical jurisprudence] *585
Steinsleger, M., [Pipe stem in trachea] (94) 425
Stellwagen, T. C., Jr., [Diphtheroids and sterility] *977
Stengel, A., [Renal disease] (29) 1033
Stephens, J. W. W., [Quinin in malaria] (4) 889
Stern, N. S., [Thyroid extract and heart-block] (29) 343
Stevens, A. R., [War nephritis] *1760
Stevens, F. A., [Iron metabolism of hemochromatosis] (20) 125, [Acidosis in children] (1) 267
Stevens, H. C., [Muscular atrophy] *835
Stevens, I. M., [Smallpox vaccination] (80) 418
Stevenson, W. W., [Paresis] (65) 1569

Stewart, C. E., [Pneumopericardium] *1222
Stewart, D. H., [Fallopian tube and intestinal stasis] (21) 192
Stewart, G. N., [Effect of phrenic sympathetic union on thyroid] (15) 808
Stieglitz, J., [Synthetic drugs] *536, *688, *923, [Procain and novocain] 1969
Stiell, W. F., [Impetigo contagiosa and nephritis] (26) 1571
Stillians, A. W., [Wassermann reaction] (31) 2054
Stirling, W. C., Jr., [Arsphenamin] *1458
Stoddard, J. L., [Anaerobes] *906
Stokes, C. F., [Narcotic addiction] *766
Stokes, M. B., [Enlarged spleen] *2001
Stoll, H. F., [Tuberculosis examinations] *605
Stone, L S., [Iodin in delivery] 1489
Storey, R. A., [Empyema] (17) 959
Stopford, J. S. B., [Injuries of peripheral nerves] (11) 1400
Stoppato, U., [Abdominal wounds] (70) 659
Strandberg, J., [Mycosis] (119) 136
Strauss, A. E., [Rhythm exhibiting R-P intervals] (6) 955
Street, J. P., [Patent medicine situation] (10) 415
Strickler, D. A., [Prevention of medical frauds] 567, [Medical licensure] 647
Strong, R. P., [Trench fever] *1597
Struycken, H. J. L., [Nystagmus] (102) 1510
Surraco, L. A., [Cholesterol index] (78) 1268
Sutton, R. L., [Oxygen and balanitis gangrenosa] *675
Suzuki, T., [Sugar in blood in beriberi] (49) 61
Svith, N., [Swine plague] (133) 1200
Swan, J. M., [Recruits with heart disease] (72) 732
Swanson, A. M., [Diet and toxicity of sodium tartrate] (88) 887, [Tartrates, citrates, and oxalates] (50) 1261
Sweany, H. C., [Enzymes of tubercle bacillus] (52) 1400
Sweet, G. B., [Jaundice] (4) 1795
Sweet, J. E., [Trench foot] *455, [Dichloramin-T] *605, [Shock] (1) 1792, [Trench foot] (11) 1796
Swift, H. F., [Trench fever] *1597
Syk, I., [Serotherapy of meningitis] (120) 136
Symmers, D., [Banti's disease] (10) 191, [Wassermann reaction] *279, [Lymphoid hyperplasias] (40) 650, [Cardiopathy and goiter] (30) 1033
Syms, P., [Pneumococcus peritonitis] (26) 1119
Szlapka, T. L., [Urobilin and urobilinogen] (8) 1498

T

Tachigara, S., [Blood in splenectomized puppies] (62) 277
Taddei, D., [Healing of skin] (78) 1802
Takenaka, S., [Findings in remaining lung] (83) 373
Takeuchi, M., [Scarlet red and mice] (95) 741
Talamo, G., [Trophic lesions in face] (71) 964
Tanberg, A., [Pregnancy albumosuria] (110) 742
Targhetta, [Kala-azar] (37) 1638
de Tarnowsky, G., [Medical officer in war zone] 699, [Zone of advance] *771, [American surgeon at the front] 1382, [Great melting pot] 1973
Tatlow, E. T., [Wounds of knee] (7) 812
Taussig, L., [Albumin-globulin in antitoxic immunity] (74) 193, [Blood proteins] (38) 486
Taylor, H. D., [Solvent action of antiseptics] (54) 268, [Antiseptics and B. welchii toxin] (68) 1036, [Hypochlorite and chloramin-T solutions] (69) 1794, [Toxicity of antiseptics] (70) 1794
Taylor, K., [Tetanus] *681
Taylor, R. T., [Foot strapping] (72) 1569
Tchertkoff, J., [Creatinin content of blood] (64) 494, [Uremia] (65) 964
Teacher, J. H., [Sarcoma and cystic disease of bone] (10) 735, [Cancer of bone] (7) 1038
Teague, O., [Endo medium] *151
Teal, F. F., [Dementia praecox] (13) 1188
Tedeschi, E., [Soldier's heart] (50) 351, [Tuberculosis and gassing] (66) 740
Témoin, [Surgery of stomach] (38) 492
Templeton, W., [Acriflavine and proflavine] (45) 1895
Tenani, O., [Causalgia] (47) 1126
Terhune, W. B., [War neuroses] *1369
Terres, J., [National Medical Institute of Mexico] (75) 423
Teulières, [Eye and asphyxiating gases] (53) 132, [Eye injuries] (42) 1265
Tewksbury, W. D., [Pneumothorax] *293
de Teyssier, [Emetin in amebic liver disease] (35) 815
Thalhimer, W., [Ulcer and carcinoma of stomach] (29) 956
Thaysen, T. E. H., [Constipation] (98) 1988
Thévenet, [Bone resection for muscular retraction] (48) 575, [Ankylosis of elbow] (49) 575, [*Osteochondritis after pleurotomy*] (50) 575
Thévenon, [Test for occult blood] (43) 656
Thibault, J. K., Jr., [Larvicide for mosquitoes] *1215
Thibierge, G., [Frequency of scabies] (36) 198, [Pustules of munition workers] (18) 1402
Thomas, B. A., [Cerebrospinal syphilis] 1329
Thomas, R. E., [Typhoid] 481
Thompson, J. E., [*Sacral teratoma*] 266
Thoms, H., [Anencephaly] *10, [Iodin] 1115, [Modification of Ahlfeld method] (117) 1636
Thomsen, L., [Swine plague] (124) 1272
Thomsen, O., [Meningitis] (100) 498
Thrush, M. C., [Venereal prophylaxis] *1922
Tièche, [Smallpox and chickenpox] (58) 739
Tillman, J., [Lungs with valvular disease] (94) 662
Tilney, F., [Poliomyelitis] (85) 811
Timbal, L., [Dilatation from atony] (27) 1505
Titus, P., [Obstetric superstitions] 1493
Tixier, L., [Malaria] (58) 491
Tockmann, [Malarial meningism] (42) 891
Todd, J. C., [Reconstruction] 2012
de Toledo, R. A., [Tear sign of death] (97) 1197
Tomasinelli, G., [Linear stethoscope] (80) 1341
Tomiselli, A., [Tumor of peripheral nerve] (76) 660
Toribio, J. P., [Cervicitis] (89) 424
Torres, O., [Helminthiasis] (66) 423
Tousey, S., [Localization of foreign bodies] 50
Toussaint, M., [Surgical treatment of ascites] (59) 351
Towne, E. B., [Poliomyelitis] (40) 1260
Townsend, W. W., [Genito-urinary service] *682
Toyama, I., [Normal serum and meningococci] 1329, [Antibody production] 1496
Trabue, E. McD., [Ankylostoma] (72) 1189
Tracy, E. A., [Red streak] (52) 1120
Tracy, J. L., [Tobacco and aviation] 1325
Tracy, S. E., [Barbour's linen flax thread] 1787
Tramer, M., [Psychoses] (82) 1196
Tranter, C. L., [Infarction of heart] (7) 267
Treadgold, C. H., [Quinin in malaria] (1) 1981
Trémolières, F., [Phrenopericarditis] (61) 1574
Trèves, A., [Amputation of foot] (22) 1402
Tricoire, [Enterococcus infections] (42) 422
Triudin, P. N., [Trench fever] (117) 1271
Troisier, J., [Diphtheria bacilli] (39) 198, [Epididymitis after meningitis] (45) 1040
Trotter, W., [Wounds of jaw] (5) 572
Trout, H. H., [Cesarean section] 266
Tsen, E. T. H., [Antigen dose and antibody production] (54) 810
Tsudji, M., [Bacteria and tyrosin] (89) 1130
Tsuji, H., [Communicating hydrocele] (92) 1130
Tuffier, T., [Cicatrization of wounds] (74) 652, [Chest wounds] 882, [Army surgery] (39) 1039
Tumpowski, I., [Stability of secretin] 115
Tunnicliff, R., [Measles and German measles] (35) 1634
Turenne, A., [Premature senility] (85) 894, [Vesico-vaginal fistula] (109) 1642
Turquéty, R., [Amebic dysentery] (29) 273
Turtur, G., [Nasal lesion in cocain addicts] (38) 2058
Twyman, E. D., [*Intestinal nonrotation*] *672
Tytler, W. H., [Trench nephritis] *998, (22) 1264

U

Udaondo, C. B., [Syphilitic pancreatitis] (79) 421, [Lymphogranulomatosis] (81) 424
Uddgren, G., [Injection of milk] 1257
Ugdulena, G., [Glucose in urine] (85) 1802
Ugon, A., [Typhoid with hemoglobinuria] (73) 1129
Unger, L. J., [Diet of negro mother] *900
Uribe y Troncoso, M., [Ophthalmology] (74) 423
Urra, F. M., [Cancer] (88) 1900
Urrutia, L., [Pancreatitis] (112) 1198
Uteau, R., [Pyelonephritis] (54) 494, [Genito-urinary psychoneuroses] (62) 1340

V

Vaccari, L., [Wound of heart] (52) 1404
Vaglio, E
with
Valdes, J.
Valensi, J. L., [
cation] (38) 1338
Valentine, E., [Cold and lobar pneumonia] (47) 268, [Pneumonia] *513
Vallery-Radot, P., [Initial uremia] (37) 422, [Rhythmic retention of salt] (29) 1402
Vallon, C., [Alarmists] (22) 1798
Valverde, B., [Crystals in blood and death] (84) 1576
Van Andel, M. A., [Plague] (101) 1510
Van den Helm, I. J., [Dermoid cysts] (125) 1642
Vander Bogert, F., [Lactic acid cultures] (91) 489, [Whooping cough] (3) 1398
Van der Hoeve, J., [Iron scrap in eyeball] (93) 895
Van der Hoeven, H., Jr., [Psychoses] (129) 1046
Van Dongen, J. A., [Edema of uterine cervix] (93) 1130
Van Eman, F. T., [Date of labor] 1889
Van Leersum, E. C., [*Potato flour* biscuits] (113) 820
Van Lier, E. H., [Gastro-enterostomy] (108) 1342
Van Nuys, J. C., [Enlarged spleen] *2001
Van Os, W. H. A., [Perforation of gallbladder in pregnancy] (116) 820
Van Ravenswaaij, A., [Pupil dilation and deafness] (124) 1199
Van Rijnberk, G., [Experimental research] (109) 135, [Divining-rod in medicine] (91) 89
Van Rijssel, E. C., [Sarcoma of ankle] (112) 66
Van Roy, R., [Infant welfare work in Belgium] (45) 657
Van Schelven, T., [Infection with gas bacilli] (113) 66
Van Slyke, D. D., [Lung volume] (52) 268
Vanghetti, G., [Kinematic plastics] (53) 1984
Vaquez, H., [Slow endocarditis] (44) 891, [Roentgenoscopic outlining of ventricles] (29) 1125, [*Benzene in leukemia*] *(43)* 1506
Vargas, M., [Scarlet fever] (83) 965
Vaucher, E., [Genital complications of typhoid] (60) 1340
Vaughan, R. T., [Rupture of hernial scar] 265
Vaughan, W. T., [Pneumococci] *431, [Tachycardia] (34) 1033
Vecchia, E., [Gonorrhea] (53) 1404
Velyaminoff, N. A., [Mammary tumor] (112) 1270
Veraart, B., [Scarlet fever in parturient] (126) 1642
Vergelot, C., [Flora of wounds] (28) 1124, [Streptococci in wounds] (43) 1639
Vernes, A., [Seroreaction of syphilis] (52) 493
Vernet, M., [Pneumogastric paralysis] (26) 1124
Verpy, G., [Glycemia] (40) 656
Veyrassat, [Prosthesis for nose] (65) 494
Viannay, C., [War surgery] (61) 1194
Victor, J. A., [Apparatus for holding foot] *678
Viets, H., [Unilateral ophthalmoplegia] (61) 1569
Vigano, L., [Meningitis] (79) 1013
Vignes, H., [Healing of wounds] (70) 63, [Shock] (62) 963
Vigot, [Siphon sterilization of pleura] (56) 963
Villandre, C., [Autovaccine in cerebral abscess] (49) 131, [Intracranial foreign bodies] (42) 575, [Radioscopy of face] (65) 817 [Repair of skull] (66) 893
Villapadierna, E. M., [Syphilitic polyneuritis] (96) 579, [Syphilis] (91) 1576, [Foundlings' asylums] (122) 1642
Villela, E., [Scorpion stings] (65) 423, [Trypanosomiasis] (88) 1802
Vincent, B., [Agglutination test] *1219
Vincent, W. G., [Greenstick fractures] *78, [Elastic traction] 1325
Vivian, C. S., [Method of obtaining skin flaps] (122) 489
Vogt, A., [Atrophy of retina] (68) 964
Voivenel, P., [Asphyxia from war gases] (63) 578, [Morbid fear] (57) 1639
von Adelung, E., [Tuberculosis and syphilis] *1211
Vroom, W. L., [Sequel to measles] (76) 1334

W

Wade, B. N., [Salvarsan apparatus] *378
Wadsworth, A. B., [Pneumonia] 1496
Wagner, [Epinephrin test of heart] (75) 1195, (47) 1506
Waits, C. E., [Femoral aneurysm] (139) 58
Wakeman, A. J., [Proteins of cow's milk] (58) 417
Walker, E. L., [Granuloma inguinale] (56) 810
Walker, E. W. A., [Inoculation against typhoid] (15) 1400
Walker, I. C., [Eczema from proteins] *897
Walker, O. J., [Balantidium coli] *507
Wallau, C., [Syphilis] (100) 1803, [Foreign bodies] (101) 1803
Waller, H., [Contagious diseases] (96) 497
Wallgren, A., [Lymphogranulomatosis] (124) 136, [Propagation of pleural sounds] (125) 136
Walsh, J., [Pregnancy and tuberculosis (29) 883
Walther, C., [Elephantiasis] (27) 1265
Wang, S. L., [Tuberculosis] *368
Ward, H. C., [Ozena] (81) 1121
Warden, C. C., [Specific fats in complement fixation] (36) 570
Warner, E. F., [Tuberculin tests] (33) 809
Warner, F., [Middle cuneiform bone] *83, [Uterine fibroids] (12) 192
Warren, H. S., [Arsphenamin reactions] 1562
Warren, J. H., [Tumors of salivary glands] (9) 568
Warthin, A. S., [Skin lesions from mustard gas] (66) 1980
Watabiki, T., [Purpura induced by antiblood-platelet] (79) 353, [Precipitins in gonococcal infections] (33) 570, [Spirochetes] *1522
Watanabe, J., [Embryonal nephroma] (96) 741
Waters, C. A., [Roentgenization of thymus] (8) 54
Waters, C. H., [Ovarian hemorrhage] *295

Watkins, T. J., [Cystocele and prolapse] (120) 1636
Watson, B. P., [Cancer complicating pregnancy] 1976
Watson, C. G., [Transfusion] (5) 59, (4) 568
Watson, E. M., [Vesical orifice after perineal prostatectomy] (56) 269, [Intraspinal therapy] *296
Watson, T. A., [Brilliant green and vaccine virus] (34) 570
Watts, S. H., [Subacute pancreatitis] 414
Wayson, N. E., [Antipneumococcic serum] *1747
Weaver, G. H., [Face mask] *76, [Scarlet fever] (74) 957
Webb, G. B., [Transplantation *of* tuberculous lymph nodes] (35) 884, [Cigaret smoke and lungs] (22) 1119
Weidmann, R. J., [Hemoglobin and Tallqvist scale] 1563
Weil, E. A., [Roentgenotherapy] (40) 1338. [Tuberculosis] (47) 1338, [Rachitis] (63) 1507
Weil, P. E., [Air to replace effusions] (38) 422
Weill, A., [Initial uremia] (37) 422
Weill, E., [War bread] (40) 1799
Weinstein, I., [Antibodies obtained from precipitates of typhoid antityphoid serum] (46) 731
Weiskotten, H. G., [Action of benzol] (79) 127
Weiss, C., [Skin reaction to pneumotoxin] 1496, [Pneumonic lungs] (36) 1634, [Quinin and pneumotoxin] (37) 1634
Weiss, R. S., [Lupus erythematosus discoides and tuberculosis] (4) 1498
Weller, C. V., [Skin lesions from mustard gas] (66) 1980
Wells, H. G., [Neoplasm of fallopian tube] (134) 58, [Roumania] *743
Wentworth, J. A., [Motabolism in gout] (26) 343
Wernøe, T. B., [Focus of infectious jaundice] (93) 202
Wernstedt, W., [Poliomyelitis] (128) 136
Weston, P. G., [Colloidal gold curve and syphilis] (7) 883
Weve, H., [Mumps iridocyclitis] (107) 1342
Wheeler, G. W., [Poliomyelitis] (39) 1260
White, A., [Pharmacist in Army Medical Department] 1562
White, E. C., [Urinary antisepsis] (33) 2055
White, E. W., [Shell shock and neurasthenia] (10) 1570
White, G. B., [Pneumococcus serum] 1497
Whitmore, E. R., [Lipovaccines] *427, *902, [Malaria] (48) 1035
Whitney, J. L., [Acidosis] (23) 125
Whittaker, H. A., [Swimming pools] *1901
Wicht, W. F., [Malaria] (11) 1981
Widal, F., [Initial uremia] (37) 422
Widfelt, G., [Scarlet fever] (122) 968
Wieden, E., [Trauma of eye] (50) 2059
Wieland, E., [Pyelitis] (83) 817, (67) 964
Wiggors, C. J., [Circulatory failure] *508, [Abdominal shock] (17) 1332
Wijnhausen, O. J., [Glycosuria] (104) 1342
Wilbur, R. L., [War problems and *food*] 408, [Address] 1937
Wilder, W. H., [Medical problems and draft] 805
Wildhagen, K., [Diphtheria bacilli in urine] (92) 354
Wilensky, A. O., [Ulcer and carcinoma of stomach] (29) 956
Wilkinson, K. D., [Wounds of chest] (1) 196
Willan, R. J., [Diagnostic sign in ruptured digestive .ulcers] (9) 959
Willoms, C., [Screw extension for fractures] (53) 493
Williams, F. E., [Dysentery bacilli] (3) 1795
Williams, F. H., [Instructions in treatment] 1790
Williams, F. R., [Wound dressing] (19) 1259
Williams, H. U., [Agglutination] *1754, [Nephritis] 2050
Williams, J. R., [Blood in carbon monoxid poisoning] 119, [Syphilis] and diabetes] *365, [Nephritis] 2051
Williamson, B. F., [Peanuts as food] 1396
Williamson, R. T., [Neurasthenia following shell shock] (13) 59, [Diabetes] (7) 959
Willis, A. M., [Rupture of spleen] 341
Willis, J. D., [Arsphenamin] 1254
Willius, F. A., [Tachycardia] (24) 268, [Auricular flutter] (31) 343
Willy, R. G., [Antipoliomyelitic serum] (79) 957
Wilmer, H. B., [Trench foot] *455 (11) 1796
Wilson, F. N., [Heart-block] (32) 343, (36) 650, [Digitalis and heart] (49) 732
Wilson, G. W., [Blood substitutes] *219
Wilson, J. B. F., [Traumatic pericarditis] (24) 130
Wilson, J. C., [Fracture of spine] (8) 1890
Wilson, R. J., [Sanatorium diets] 258
Winslow, C.-E. A., [Public health administration in Russia] 412, [Potassium bromate and enzyme action] (46) 1188
Winslow, R., [Subparietal rupture] 414
Wise, L. E., [Glycosuria from zinc salts] (60) 1978
Wittenberg, J., [Tuberculosis of kidney] *591
Wittich, F. W., [Complement fixation in tuberculosis] (14) 416
Wobus, R. E., [Elophantiasis] *987
Woerdeman, M. W., [Pituitary body] (94) 1130
Woglom, W. H., [Significance of cartilage of carcinochondrosarcoma] (40) 730
Woimant, H., [Fractures] (48) 962
Wolbach, S. B., [Rocky Mountain spotted fever] (60) 810
Wolfsohn, J. M., [War psychoneuroses] *303, (14) 735
Wood, C. A., [Rehabilitation in foreign countries] 1925
Wood, E. J., [Tropical sprue] 1791
Woodbury, F. T., [Venereal disease] 1969
Woolley, P. G., [Coronary lesions] (49) 56, [Meningitis] (54) 1568
Work, H., [Physicians and local boards] 1324
Wright, A. E., [Acidemia in gas gangrene] (18) 889, [Leukocytes in wounds] (15) 1263
Wright, F. T., [Location of terminal ileum] (153) 655
Wright, H., [Minor forms of heali
648
Wright, J. D., [Sound perception
deaf mutes] 49
Wulff, F., [Meningitis] (100)
Wulff, H., [Obstetric arm and holders] (106) 580
Wynne, H. M. N., [Hemogl
(45) 345

X

Xavier, H., [Brain tumor] (71)

Y

Yacoel, J., [Benzene in leukem
(43) 1506
Yamagiwa, K., [Pathogenesis
carcinoma] (38) 730, [Ca
of esophagus] (98) 741
Yaniz, E., [Ileus] (98) 1269
Yarotzky, A. I., [Psychother
(106) 65
Yergason, R. M., [Tendon tr
plantation] (15) 1633
Young, A. D., [Balantidium co
*507
Young, A. E., [Coagulation time
tuberculosis] (2) 191
Young, H. H., [Radium in
(55) 269, [Vesical div
(82) 571, [High freque
rent] (60) 1189
Young, J. S., [Localizatio
eign bodies] *24

Z

Zagari, [Hematemesis from
(77) 1802
Zahorsky, J., [Pus corpuscles
stool] (43) 1120
Zandren, S., [Lung cavity simu
ing pneumothorax] (97) 662
Zangger, T., [Camphor and hea
(52) 658
Zarzycki, P., [Meningitis] (42)
Zayas, S. M., [Arsenic poiso
(104) 1270
Zerbini, C. V., [Venereal gran
ma] (82) 1406
Zingher, A., [Schick test] *227
Zinke, E. G., [Rupture of uterus]
266
Zugsmith, E., [Metabolism of asthma] (15) 1398
Zwaardemaker, H., [Radioactive balances] (100) 1510

INDEX TO PAGES

OF THE JOURNAL, ACCORDING TO WEEKLY ISSUES—VOLUME 70, JANUARY-JUNE, 1918

Pages	No.	Date	
1- 66	1	Jan.	5
67- 136	2	Jan.	12
137- 202	3	Jan.	19
203- 278	4	Jan.	26
279- 354	5	Feb.	2
355- 426	6	Feb.	9
427- 498	7	Feb.	16
499- 580	8	Feb.	23
581- 662	9	March	2
663- 742	10	March	9
743- 820	11	March	16
821- 896	12	March	23
897- 968	13	March	30
969-1046	14	April	6
1047-1130	15	April	13
1131-1200	16	April	20
1201-1272	17	April	27
1273-1344	18	May	4
1345-1434	19	May	11
1435-1510	20	May	18
1511-1578	21	May	2
1579-1736	22	June	
1737-1804	23	June	
1805-1900	24	June	
1901-1988	25	June	
1989-2104	26	June	